CU
AMIGA

KICK OFF 3
FREE POSTER & '92/3 FIXTURES INSIDE!

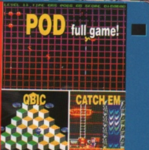
WORTH £80!
GOLD DISK'S MOVIESETTER*
*REQUIRES 2 BLANK DISKS

DISK 40
GOLD DISK'S MovieSetter!
Beat Eric Schwartz at his own game with our greatest coverdisk ever – Gold Disk's *MovieSetter*. Create stunning animations with this astounding and exclusive package. Link screens, edit shots, layer sound effects – makes your Amiga into a full movie studio...

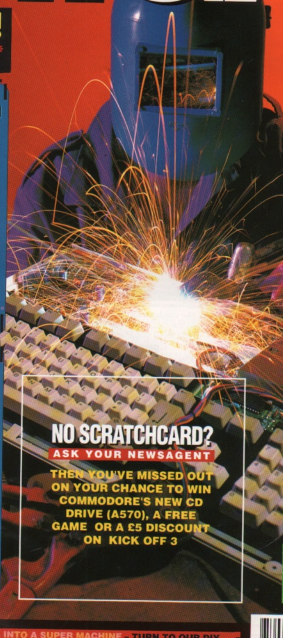
* Pal Mode * 32 colours * synchronised sounds * can run in 512k * backdrop editor * wipe effects * full storyboarding * WB 2.0 compatible * stand-alone playback module

NO DISK ATTACHED?
ASK YOUR NEWSAGENT

DISK 41
POD: Complete game! Exclusive Shaun Southern conversion of this great C64 classic
QBIC: Complete game! Brilliant Q*Bert clone from the writer of SWIV
CATCH 'EM: Five levels of beat 'em up mayhem
MAZE: Can you escape from this deadly 3D maze
Plus the best Public Domain games!
CU AMIGA



NO DISK ATTACHED?
ASK YOUR NEWSAGENT



NO SCRATCHCARD?
ASK YOUR NEWSAGENT
THEN YOU'VE MISSED OUT ON YOUR CHANCE TO WIN COMMODORE'S NEW CD DRIVE (A570), A FREE GAME OR A £5 DISCOUNT ON KICK OFF 3

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ON THE CHEAP

ALIEN^3
FIRST LOOK!

KICK OFF 3 EXCLUSIVE

SEPTEMBER 1992 £3.95
US$6.95 CA$9.95 DM20
PTA 995 L13600
AN EMAP PUBLICATION

TRANSFORM YOUR AMIGA INTO A SUPER MACHINE – TURN TO OUR DIY SPECIAL ON PAGE 26 ■ KIND WORDS 3.0 ■ A570 REVIEWED AND RATED ■ GRAPHICS DIY ■ PERSONAL FINANCE MANAGER PLUS ■ SHADOW OF THE BEAST 3 ■ SWORD OF HONOUR ■ HARD DRIVE BUYER'S GUIDE ■ INDY 4

ROLE PLAY FOR PC

The Legend of Darkmoon continues

The famous role model for all AD&D® role-playing fantasies, the dreaded Temple Darkmoon is back.

More sinister, terrifying and haunting than ever. It will slowly weave into your sub-conscious and refuse to let go.

Official
Advanced Dungeons & Dragons
Computer Product
Eye of the Beholder II
The Legend of Darkmoon
A Legend Series
Fantasy Role-Playing Saga, Vol. II
SSI
Strategic Simulations, Inc.

Through a clearing in the shadowy forest, a trio of towers rise menacingly into the night sky. You are on the threshold of terror, one wrong move and it's curtains. Finito.

The exciting sequel to Eye of the Beholder is here. Bigger. Better. And so realistic you'll keep looking over your shoulder.

The improved "point 'n' click" interface lets you come face-to-face with the most gruesome characters and complex clues.

In fact, you'll only want to stop playing this State-of-the-Art adventure game for one reason. To pinch yourself and prove you're not in the middle of a nightmare.

Available on: PC (EGA, VGA/ MCGA (256 Colour). 640k RAM and Hard disk required. Supports AdLib™, Soundblaster™ and compatibles). Amiga version coming soon.

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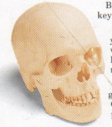
LAUGHS FOR PC

Side-splitting pirate adventure

Just when you thought it was le end for LeChuck, he's back.

The legend states that "when LeChuck wants you dead, you're dead"- grim news for his old adversary, young Guybrush Threepwood.

LeChuck's Revenge
Monkey Island 2
GR
ADVEN
BY RON GIL



But fear not. Big Whoop holds the key to great power. All is not lost.

In this stunning graphic sequel, young Guybrush's adventures will have you rolling in hysterics. Beware, you'll laugh so hard, milk will flow from your nose.

Behind every pirate is a really gnarly chair and in front of Guybrush is a saga so savage it'll put hairs on your chest.

With 256 colours (PC version), variable difficulty modes, interactive reggae music and "point 'n' click" interface, you'll be transported to Monkey Island in a flash.

So, brace yourself, the fun starts here. Who knows when it will stop?

Available on: Amiga (32 colours) and PC (VGA/ MCGA. Requires 640k Ram AT or compatible. Supports AdLib™, Roland™, Soundblaster™ and SoundMaster™II sound cards. Hard drive required.

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LucasArts
Lucasfilm Games

A serious PC experience

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SPORT FOR PC

Play a round All year round

It's raining cats and dogs outside, but it's a beautiful crisp Spring day on the Torrey Pines Golf Course.

You approach the tee, driver in hand. Gazing down the fairway, you notice every feature of this classic Pacific Ocean Links course.

LINKS
THE CHALLENGE OF GOLF
EXCLUSIVE 256 COLOR GRAPHICS!
ACCESS

The Challenge of Golf takes you to a new level of realism. You can almost smell the grass, feel the silky putting surfaces and take in the fresh sea air. At times, you'll want to replace the divots, until you remember it's only a game.

But WOW, what a game!

And now, the 256 colour 3D graphics can be enjoyed on another six championship courses: Bountiful Municipal, Firestone CC South, Bayhill, Pinehurst, Barton Creek and Hyatt Dorado.

So, put on your sun visor and practice your swing. You're next on the tee.

Available on:
PC (VGA or MCGA,
640k and Hard disk
required. Supports:
AdLib™, Soundblaster™,
MSound™ sound cards)
Amiga version coming soon.

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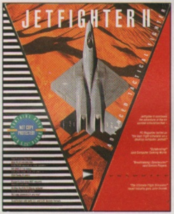
ACCESS

FLIGHT FOR PC

A Simulation to take your breath away

Hard on the tail of Jetfighter I, the mind-blowing combat sequel is airborne.

Jetfighter II: Advanced Tactical Fighter shoots Top Gun down in flames.

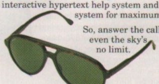


Strap yourself in as the most advanced and powerful 3D technology takes to the skies, with you as pilot whatever the time of day or night.

Revolutionary animation lets you see parachutes opening in the wind, radar chaff blooming behind your jet and feel the landing gear deploy and retract.

Dogfights take on a different dimension with real time artificial intelligence. Includes F/A-18 Hornet, F-16 Falcon and F-14 Tomcat.

Features instant flying mode for beginners, interactive hypertext help system and tunable joystick system for maximum response.



So, answer the call of the wild. Now, even the sky's no limit.

Available on:
PC (CGA/Tandy (4 Colour),
EGA (16 colour) VGA (256 Colour). 640k RAM
required. Supports AdLib™ and Soundblaster™
sound cards. Hard drive recommended.

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VELOCITY

U.S. GOLD

A serious PC experience

SCREENSHOTS ARE ONLY INTENDED TO BE ILLUSTRATIVE OF THE GAMEPLAY AND NOT THE SCREEN GRAPHICS WHICH MAY VARY CONSIDERABLY BETWEEN DIFFERENT FORMATS IN QUALITY AND APPEARANCE AND ARE SUBJECT TO THE COMPUTER'S SPECIFICATIONS

CU AMIGA CONTENTS

26 DO IT YOURSELF

Nobody could ever say that computing was a cheap hobby. As your Amiga system grows, unfortunately your bank account will diminish at a similarly-steady rate — but it doesn't have to be that way. In this month's lead feature, we enter the perplexing universe of DIY. No, it isn't a world governed by people who excel in the use of a soldering iron, and, no, it isn't as complex as it often seems.

To ease you into this brave new world of resistors, capacitors and spindly bits of wire, CU Amiga has prepared a series of projects which will enable you to add all manner of useful gadgets to your system — and at very little cost. Our devices range from the easy — such as a freeze switch to make your games easier to play — to a light sensor which could feasibly double up as a burglar alarm. All the 'ingredients' you will need for such operations are detailed, and step-by-step photos and diagrams will ensure that you don't end up welding your fingers to your Amiga keyboard.

So, if you have ever shied away from Do It Yourself, then do yourself (and your Bank Manager) a favour by reading our article and delving into the delights of computer creation...

SPECIALS

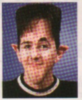
36 SCRATCHCARD COMPETITION

By now you'll probably have noticed the scratchcard attached to this issue of CU Amiga. Simply by rubbing out the three silver boxes, you'll be able to find out whether you've won one of the four A570 drives we've got on offer or if you've been successful in winning a copy of *Kick Off 3*. If not, there's still the chance to get £5 of *Kick Off 3*. What can we say? We're just all heart! For more information, simply turn to page 36 now!

KICK OFF 3
WIN!!!
COMMODORE'S CD DRIVE(A570)
OR: A free copy of Kick Off 3
OR: £5 discount on Kick Off 3
NO PURCHASE NECESSARY
FOR COMPETITION DETAILS SEE OVERLEAF

OFF THE CUFF

EDITORIAL



Dan Slingsby – Editor

Welcome to yet another massive issue of CU Amiga. Inside, you'll find the very best in Amiga games and productivity reviews, plus regular pages devoted to buyer's guides and tutorials to help you get the most out of your Amiga.

And, as usual, we've also got a white-hot full price utility. This month Gold Disk's *MovieSetter* adorns one of our TWO coverdisks. If you're not familiar with this amazing package, then you're in for a treat. It's a complete animation and movie studio which can breath life into your graphics. *MovieSetter* is used by some of the Amiga's top animators, including the multi-talented Eric Schwartz whose spectacular animations are often featured in our Public Domain pages. Enjoy it!

Just as we were putting this issue to bed, news came in of Commodore's A600 price cut, slashing the cost of the machine to £299. This should open up the world of Amiga computing to thousands of new users and, hopefully, signal Commodore's fight back against the dual threat of cheaper PCs and the even cheaper consoles. People have been saying that the Amiga is past its prime, but with this aggressive new price point and two new machines waiting in the wings, things haven't looked as promising for a long while. Even the A570 has, at long last, made its debut, so now Commodore can attack the home computer market on two fronts. It's going to be an interesting Christmas.

And while I've still got your attention (WAKE UP at the back!), I'd just like to wish the very best to our Deputy Editor, Steve Merrett, and Staff Writer, Steve Keen, both of whom are moving on to bigger and better things. Steve Merrett has been with the mag since November 1990 and has helped make the magazine what it is today (if that's a good thing or not, I don't know!). Steve Keen joined us towards the end of last year and, although only with us a short time, has proved invaluable in pumping out a steady stream of reviews and features. It's just not going to be the same without 'em...Hurrah!

REGULARS

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GET SERIOUS

PRODUCTIVITY REVIEWS

This month, our dedicated team of reviewers get to grips with the long-awaited A570 CD unit. After what seems an eternity of waiting, does Commodore's small unit truly offer complete CDTV compatibility, and, if so, is it really the way forward? Also under scrutiny is Dr. T's all-rounder music package, *KCS 3.5*. This complete package allows the user to work on every aspect of a tune using the Dr. T's software, whether it is initially putting the thing together or even printing out a score. That's not it, of course, and a further selection of reviews also await your attention...

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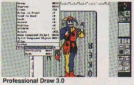
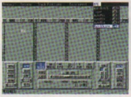

Professional Draw 3.0


KCS 3.57 with Level II

SCREEN SCENE

GAME REVIEWS

With previews of *Aliens3*, *Kick Off 3*, *Indy 4* and *Second Samurai*, there's certainly a lot to look forward to later in the year. There's also a lot of brilliant games out now, too, as our reviews of *Shadow of the Beast 3*, *Sword of Honour*, *Trivial Pursuit* and *Tennis Cup 2* prove.

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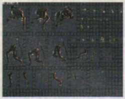
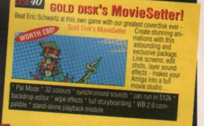
KickOff 3


Alien³

COVERDISKS

In our continued attempt to bring you the cream of utilities and playable demos, this month our coverdisks are particularly special...


DISK 40

GOLD DISK's MovieSetter!

Beat Eric Schwartz at this own game with our greatest coverdisk ever - Gold Disk's MovieSetter

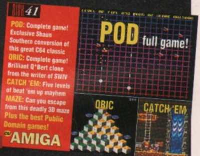
WORTH £80!

Create stunning animations with this astounding and exclusive package. Link screens, edit shots, layer sound effects - makes your Amiga into a full movie studio...

* Pal Mode * 32 colours * synchronised sounds * can run in 512k * backdrop editor * wipe effects * full storyboarding * WB 2.0 compatible * stand-alone playback module

DISK 40

Gold Disk's stunning *MovieSetter* animation studio graces disk 40, as we proudly present you with the utility Eric Schwartz uses in all his Aerotoon animations. With *MovieSetter* you can piece together stunning sequences AND add sound to them! Full editing capabilities are also available, allowing the user complete editorial control over their creations – Steve Spielberg watch out! In addition, all the usual graphical thrills, such as colour cycling and scrolling backdrops, are available to add much-needed movement to your work. In fact, the only limitations imposed on you are by the memory available and your imagination, and if you have ever wanted to take on Schwartz at his own game, then here's the perfect opportunity.


DISK 41

POD: Complete game! Exclusive Shaun Southern conversion of this great C64 classic

QBIC: Complete game! Brilliant Q*Bert clone from the writer of SWIV

CATCH 'EM: Five levels of beat 'em up mayhem

MAZE: Can you escape from this deadly 3D maze

Plus the best Public Domain games!

CU AMIGA

POD
full game!
QBIC
CATCH 'EM

DISK 41

Opening Disk 41 is an exclusive conversion of Shaun Southern's 8-bit classic, *Pod* – written for us by the great man himself. Incidentally, Shaun will also be converting some more old favourites exclusively for us, so stay tuned for more stunning versions of old faves. Also on the disk is a playable demo of DMI's cutesy ape-related caper, *Catch 'Em*, which offers several stages for your delectation.

With Shaun Southern contributing *Pod*, next up is *Q*Bic* – a conversion of the old *Q*Bert* coin-op by *SWIV* coder, Ronald Weesernik. It's a corking version of the arcade stalwart, and one that will have you returning again and again as you try to conquer its many pyramids. Finally, we enter the realms of silliness with one *Mr Wobbly*, before entering a large 3D Maze in the originally-titled *Maze*...

13▷▷20⏸ BANKING STARTS HERE▽

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PRICE DROP FOR A600

Commodore's newest Amiga has just had a 25% price cut and now retails for only £299. The machine, after healthy sales of 65,000 in its first three months, has abandoned the £399 price point that Commodore seem so fond of. The move has been explained away as the result of unprecedented reliability in the new machine, with returns of around a mere 1%. This may well be the case, but with a new machine on the horizon and a probable A600 bundle it could be that for once the company is trying to sort out a coherent price structure before the machines actually go on sale.

This will not effect the price of the A600HD (the hard drive model), which will remain at the still reasonable £499 mark. Whether or not this is because the HD model isn't as reliable as the plain A600 isn't certain.

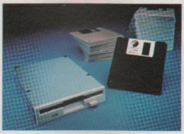
Silica Systems, one of the UK's leading Amiga dealers, were pleased with the new low price, but also surprised by the move. Andy Leaning, Silica's spokesperson offered, 'It's great news. At this price the Amiga market will grow considerably and attract a lot of new users. It'll be interesting to see what other manufacturers, particularly those producing the high specification games consoles (PC Engine, NeoGeo, etc) do in return. A £299 Amiga will make many prospective console buyers think twice about which system they buy. Previously there was a large difference between the prices of consoles and the Amiga, now that difference is much smaller and I'd expect a lot of the more serious console buyers will consider the Amiga 600 given its better specification.'

MONSTERS UNLIMITED

Probably the scoop of the year (or should that be spook of the year?!), Ocean have secured the rights to the Universal monster characters. With Dracula, Frankenstein, The Mummy and the Creature From The Black Lagoon among the many characters included in the deal, the soon-to-be released game is as yet untitled, but will feature as many of the characters as the in-house team can cram in. Featuring a 3D isometric play area, in much the same style as *Head Over Heels*, the game involves the player in a race against time to collect the six parts of an ancient crystal and thus imprison the prowling monsters for all eternity. Watch for it soon!

IDEAL HARDWARE TAKES ON FLOPTICAL

One of the most practical solutions to large volume storage has arrived in the U.K. The floptical drive is a combination of conventional magnetic disk technology and the optical drive techniques used on more expensive removable cartridge drives.



Based around a normal sized, specially treated 3.5" floppy disk, the floptical uses high precision optical alignment hardware to squeeze in an incredible 1245 tracks per inch of data. This means that a formatted disk can hold around 21Mb of data, half the size of an average hard disk. The unit itself is an embedded SCSI mechanism so it can connect directly or be added to a SCSI chain. It can also read and write standard and high-density floppy disks, which could make file transfers to other systems much easier.

No price has yet been fixed for the unit, but it is sure to be around the £200 mark. The incredible thing is that the floptical disks, manufactured at the moment by 3M and Maxell, cost only £12 – that's about £1.75 per megabyte.

The floptical drive, which is manufactured in the U.S.A. by Insite, is already very popular across the Atlantic, and is sure to catch on here as a reliable and cost effective way of backing up and transferring large volumes of data.

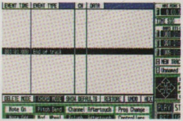
CBM PERESTROIKA SHOCK

In a surprise move, new Commodore boss Kelly Sumner recently entertained members of the press at the company's UK headquarters. The normally taciturn company executives were fielding all sorts of questions from the floor, which were understandably predominantly about the proposed new Amigas. Although not completely forthcoming about new hardware, Sumner admitted that two such machines exist and both are planned for a UK launch, although no date was given.

Well placed sources say that one of these machines will feature a 32bit 68030 running at 25 MHz and will include the new AA chipset. New graphic modes will allow resolutions up to 1280x800 in 256 colours or 16.7 million in HAM mode. The DMA channels have been speeded up to around four times their original speed, allowing for new sprites 64pixels wide and a full screen high. The blitter will also be four times faster. As mentioned before the new Amiga will feature a DSP and an 8-channe 16 bit sound chip Although Commodore were understandably cagey about a release date the latest rumours from well-placed sources in the States say that the machine will go on sale there within the next two months. If that is the case Commodore UK might seek to put together a console beating bundle for a Christmas release in this country.

SOFTWARE BUSINESS RAVES IT UP

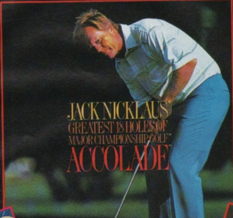
Amiga newcomers Digital Muse are imminently releasing two very promising new MIDI music packages called *Rave* and *Prodigy*. *Rave* is aimed at total beginners, and has been designed to make music making both entertaining and spontaneous. On the other hand, *Prodigy* is aimed at the experienced user, and contains every possible feature ➤



AIM ONLY FOR
THE TOP

Nicklaus Hole:
Stroke: Par:
Distance:
Total: Even par

TEE OFF ON THE MOST CHALLENGING 18 HOLES OF MAJOR CHAMPIONSHIP GOLF WITH THE LEGEND WHO HAND PICKED EACH ONE - JACK NICKLAUS.
PLAY THE BREATHTAKING 8TH AT PEBBLE BEACH AND DISCOVER WHY THE SECOND SHOT OF THIS PAR 4 IS JACK'S "FAVOURITE SHOT IN ALL GOLF" IN PROBABLY THE MOST REALISTIC AND VISUALLY STUNNING GOLF GAME EVER MADE.


JACK NICKLAUS
GREATEST 18 HOLES OF
MAJOR CHAMPIONSHIP GOLF™
ACCOLADE

Nicklaus Hole:
Stroke: Par:
Distance:
Total: Even par

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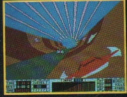

WITH

The HIT Squad

BADLANDS ROARS ONTO YOUR SCREEN IN A FABULOUS COVERSION OF THE COIN-OP HIT. A PERILOUS NEW SPORT HAS EVOLVED IN THE WASTELANDS - SPRINT RACING, AND IT'S A KILLER! CUSTOMISE YOUR RACER WITH MISSILES, SPEED, TYRES AND SHIELDS. AVOID OIL SPILLS AND A HOST OF HAZARDS TO RACE THE EIGHT UNIQUE TRACKS WHICH BECOME EVER MORE DANGEROUS AS YOU DRIVE YOUR WAY THROUGH THE LEVELS. RUTHLESS, FAST AND GREAT FUN FOR TWO PLAYERS.

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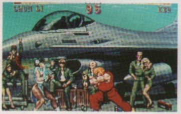
you could sensibly require. Both packages place the emphasis firmly upon user-friendliness, and both are very easy to get started with. However, Digital Muse are certainly not sacrificing features for friendliness, and they confidently declare that *Prodigy* can take on and beat the likes of Dr T's *KCS* and *QBase*. Having seen the package, I would not disagree with them. *Rave* represents an extremely exciting step forward in MIDI music technology on the Amiga, as it's the first fully upgradable modular system. Digital Muse's philosophy is that beginners don't want to be overwhelmed with complicated and unnecessary features when they buy their first MIDI package, they just want to make music as quickly as possible. Therefore, *Rave* is not over-burdened with professional features that beginners will never use, and the basic package is very simple to get to grips with. Where the exciting bit comes in, is the fact that you can upgrade *Rave* by purchasing additional program modules.

If you want professional arrangement features, just buy them, if you need comprehensive modulation and pitch drawing facilities, there are modules for that too. Whichever modules you buy, you will be sent an entirely new version of the program containing the features that you specify. This must surely be an Amiga first - a designer MIDI program! Prodigy represents the ultimate enhancement of Rave, essentially containing every possible module in one program.

Although prices have yet to be finalised, *Rave* will be approximately £70, *Prodigy* approximately £170 and additional modules will cost in the region of £15-30 each. The Software Business are distributing both programs, and you can ring them on 0480 496497 for further details. Look out next issue for an exclusive preview of both programs.

STREET FIGHTER 2 AMIGA DEBUT



With the big guns unveiling their Festive line-ups, bets are already being taken as to which game will take the coveted number one position in the Amiga game charts. CU Amiga's tip for the top has to be US Gold's conversion of the Capcom beat 'em up, *Street Fighter 2*. Already a hit on the consoles, the Amiga conversion is being handled by Creative Materials, the force behind *Final Fight* and *The Godfather*.

For those not in the know, the coin-op features huge sprites as you pit your fighting prowess against an assortment of the world's strongest men and women. All the main coin-op characters are to be featured, including Ryu, a Japanese lad who has mastered the arts of Kenpo and Karate; Honda, a lardy fat guy whose speciality is Sumo Wrestling; Zangief, Russia's answer to Hulk Hogan; and Dhalism, a Yoga master.

One or two players can control any of the eight charaters in the game with the addition of four computer controlled tough guys to test your skills against. We'll have a review soon.

PCMCIA SUPPORT FROM MITSUBISHI

MELCARD
MITSUBISHI
512 KB

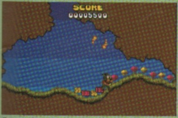
The advantage of the A600 supporting the PCMCIA 'credit-card' standard is that a lot of manufacturers already support this standard on the PC, so a lot of devices are compatible by default. One such device is the latest battery-backed static RAM card from Mitsubishi. They come in various configurations and all have a special back-up battery in addition to the main battery, to prevent loss of data when replacing the main Lithium power cell.

The cards themselves are very small, only 8.5 by 5cm and a wafer thin 3.3mm thick. This means that you can easily store your data, pop it in your pocket and nip round to your mates house with all the information.

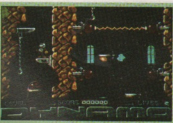
The SRAM card joins a growing number of peripherals available in the PCMCIA format – devices such as fax modems and network drivers are already available from some manufacturers. Hewlett-Packard, for instance, have introduced a miniature hard-drive – a 21Mb job with 18ms access time – due to retail for just $250.

GAME MUTTERINGS

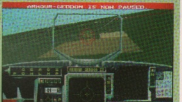
Soundware International hardly made a big splash with their debut release, *Cricket* (snigger), but the Bedfordshire-based soft co. look likely to enjoy significantly more success with their latest release. Despite its name, *Tearaway Thomas* isn't just for kids as its an addictive mix of platform antics and hidden bonus rooms with enough speed to even give Sonic a run for his money. • French outfit, Ubisoft, have roped in England captain, Stuart Pearce, to endorse their latest football compilation. Featuring *Kick Off 2* (again), *World Championship Soccer* (again), *International Soccer Challenge* (again) and *Manchester United* (again), *Psycho Soccer Selection* will be priced at a very reasonable £30.99. Trouble is, we can't imagine anyone prepared to fork out the cash for such a motley collection of old games. Knock this one into touch! • Those wacky funsters, the Codemasters, have struck a blow for pensioners everywhere by basing their latest action/puzzle platformer on the exploits of Captain Dynamo, a 75-year old superhero. Pausing only to collect his false teeth and cash his giro, the Captain has to negotiate a series of gem-packed levels in pursuit of the dastardly Von Flyswatter, a geriatric criminal who has made off with the world's largest collection of diamonds. Out soon. • Psygnosis are gearing up for a productive fourth quarter, with a whole batch of new games ready for release. Looking rather similar to Team 17's *Alien Breed*, *Cytron* is set in an underground research complex which has been taken over by rebel mechanoids. A rescue mission is planned, using the prototype Cytron robot which is capable of splitting into two independent halves. With the usual plentiful supply of power-ups and bonus tokens littering each level, the action is viewed from a bird's-eye perspective and looks tremendous fun. • Another release from the Liverpool house of ideas is the long-awaited sequel to *Armour-Geddon*. With more advanced weaponry, faster polygon graphics and a much expanded play area, *Armour-Geddon 2* will be touching down in October. • With more than 100 levels on offer, Psygnosis' third offering is a polished-looking arcade puzzle game featuring the exploits of Terry Tomato as he seeks to navigate his way through level after level of puzzle-packed screens. Various tools are at your disposal to help him on his way, including trampolines, jack-in-the-boxes and fans, with each level having a particular theme plus appropriate accompanying music. Could this be the new Lemmings-beater?



Tearaway Thomas



Captain Dynamo



Armour-Geddon 2

MERIDIAN INTO OPAL

Meridian Software Distribution, previously known as Precision Distribution, are one of several UK Distributors eagerly awaiting the first shipments of OpalVision. The package, from American-based Centaur, is designed to be a complete 24-bit graphics solution.

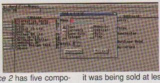
Apart from the hardware, which boasts a 768x580 true 24-bit PAL display and features a VLSI graphics co-processor, there are several software packages included.

Opal Paint seems to have features to match any of the currently available 24-bit packages, with support for IFF and Jpeg file formats, RGB and HSV palette control and support for 32-bit brushes. Also included are an icon driven presentation system and probably the worlds first 24-bit game, *The King Of Karate*, as mentioned in CU previously.

A complete range of enhancement modules will be available for OpalVision including a grabber/genlock, a flicker fixer, an input switcher and a separate graphics effects chip called, for some reason, 'The Roaster', which will apparently enable live image processing when used with the grabber.

What is perhaps most interesting about the unit is that it comes as either an internal card or an external unit which, it is claimed, will work on any Amiga, including the A600. Look out for a review soon.

GOLD DISK'S NEW OFFICE



Canadian-based Gold Disk have yet another product due for imminent release. *Gold Disk Office* was the most complete integrated software soloution when it was released a few years ago. However, most of the component parts around which it was based have undergone major facelifts in the previous six months, so it was about time the offfice had a spring clean. *Office 2* has five component parts - a word-pro, a DTP system, a spreadsheet, a graph plotter and a database. These units all run separately from each other and are in fact, slightly reworked versions of the already available Gold Disk products such as *Pagesetter*.

As the product is still in Beta test stage there is no pricing information available yet, but the last package offered substantial savings as it was being sold at less than half the price of all the component programs.

CHANNEL 5 INTERFERENCE

A500 owners who still rely on a modulator to display images via a T.V. set may find their viewing interrupted in the near future. The modulated signal usually appears around channel 36 on the UHF scale, slightly above BBC1 (depending on which broadcasting region you live in).

Unfortunately the new domestic channel, Channel 5 has been alloted a neighbouring frequency. Although not exactly the same, because of the way the signals are encoded, and depending on the strength of the signal, there is a great deal of cross channel interference.

Modulator owners can already suffer from interference from video recorders, which operate on various similar frequencies, but this is only really a problem if both the modulator and video are in close proximity and in use at the same time. In the case of a terrestrial broadcast station the interference will be a great deal worse however, and there is little chance of getting them to turn it off so that you can play Lemmings.

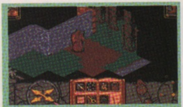
The official position is that Channel 5 should bear the cost of retuning any video equipment that will be effected, but have so far neglected to point out to consumers that this will mean retuning consoles and computers as well.

Fortunately the modulator on the Amiga has an adjustment screw to move the frequency to a different channel. The adjusting screw is present on the A600 as well, next to the RF out port. Simply twiddling the screw clockwise a bit should do the trick, but remember that you will have to retune the channel on the TV again to get the picture back. It's a bit of a nuisance, but much easier than waiting for the Channel 5 chap to do it.

Adjustment screws are present on most equipment that uses an RF frequency to display images on a TV set – the modulator components have an adjustment screw as standard, but on some units like video recorders and consoles this may mean having to open the case.

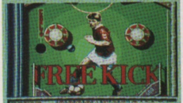
CANON APOLOGY

CU Amiga would like to apologise to Canon UK for our review of the Canon BJC-800 colour printer which we published in our August issue. It's not the review that we're apologising about, but the awful screen grabs that accompanied the piece. Due to technical problems with our in-house scanner, the original colour prints obtained from the printer were sadly distorted and failed to show the best of the machine's capabilities.



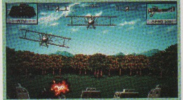
HERO QUEST 2

Gremlin's first venture into fantasy role-playing games, *Hero Quest*, was a more-than-worthy interpretation of the popular board game and consequently sold in buckets. More than a year on, and the Sheffield-based publishers are gearing up for *Hero Quest 2*. The new game, *The Legacy of Soracen*, goes beyond the confines of the boardgame and introduces a whole range of new characters as well as a beefed up combat system. A total of 14 different scenarios are on offer utilising the same isometric view as the first game.



SOCCER PINBALL

After the recent success of 21st Century's excellent *Pinball Dreams* game, Codemasters look set to capitalise on that particular title's success with the release of *Soccer Pinball*. Combining the skills of the footy pitch with those of the pinball table, the game features a number of tables each with a football theme, the overall aim being to score as many goals as possible. Priced at a budget-busting £7.99, we'll have a review next month.



HISTORY LINE

Blue Byte are set to capitalise on the success of Battle Isle, with a new strategy war game set at the time of the First World War. *History Line* begins with the assassination of archduke Franz Ferdinand, an event which precipitated the 1914-1918 war. During the course of the war, the player will have the chance to prove his strategic worth on both sides (Allies and Mittelmachte). With more than 60 unique units under your control and 24 different battlefields, the game also features regular updates on the political events of the time with newspaper reports and historically accurate facts displayed periodically. During the course of the war, your scientists constantly invent new weapons of mass destruction and your arsenal of planes, airships and tanks are continuously updated.

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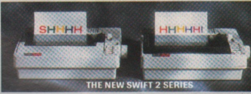

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The knot shown was superimposed after the bird was photographed.

This month's offering is Gold Disk's MovieSetter, a complete animation and production studio rolled into one. If you've always wanted to make your own demos, MovieSetter is here to make it easy...

40

COVERDISKS

MOVIESETTER

If you have never seen an animation demo on the Amiga then you obviously haven't owned one for very long. If you have, then most likely you have seen one created with Gold Disk's *MovieSetter*.

***MovieSetter* is a utility which aims to combine all the facilities of a real life production studio into one easy to use package. Because the animation is constructed from the basic blocks frame by frame this means that you can get at least a few minutes worth of animation out of even the most humble machine. The advantage of this system over more traditional animation packages like *DPaint* is that you can edit all the animated strips, or tracks, at any time – just like they do in the movies.**

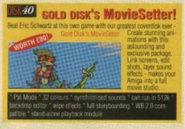
Create backdrops, synch sound effects, overlay animation frames and create your own opus now with this amazing coverdisk.

LOADING DISK 40

MovieSetter comprises two disks in its original form, and yet we have managed to squeeze it onto one disk on the cover, giving you much better value for your hard earned cash. Because the files are compressed, they will have to be decompressed before you can use the program.

Before you attempt to load the coverdisk you should format two disks and name them 'CU40A' and 'CU40B'. To format a new disk, simply insert an unwanted disk into the drive and select 'Format' from the Workbench pull-down menu. The disk will whirr for a while whilst it formats, then an 'empty' disk icon will appear on the Workbench screen. You can then rename the disk by selecting its icon (by clicking once on it) and then choosing 'rename' from the pull-down menu (the exact menu depends on which version of Workbench you are running). A text gadget will appear and you just type in the relevant name. If you are unsure about these steps please consult your Workbench manual.

When you have the two disks ready, boot from the *MoviesSetter* coverdisk. A script file will automatically decompress the data onto your disks and will ask for each in turn. When the requestor appears asking for one of the disks, insert the relevant volume and press return. The data will automatically be written to the disk. When the operation is finished you should remove the coverdisk and insert the first disk ('CU40a'). Reset your machine (using CTRL-Amiga-Amiga) and the new *Moviesetter* will autoboot. Once loaded, you'll be asked to enter a protection code – we've printed the relevant words on the next page. Simply look up the right word and type it in.



DISK 40 **GOLD DISK's MovieSetter!**

Beat Eric Schwartz at this own game with our greatest coverdisk ever - Gold Disk's MovieSetter

WORTH £80!

Create stunning animations with this astounding and exclusive package. Link screens, edit shots, layer sound effects - makes your Amiga into a full movie studio…

* Pal Mode * 32 colours * synchronised sounds * can run in 512k * backdrop editor * wipe effects * full storyboarding * WB 2.0 compatible * stand-alone playback module

GETTING TO GRIPS WITH MOVIESETTER

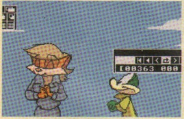
MovieSetter is an animation and video program which allows you to create your own animated cartoons in only minutes. If you've always wanted to produce your own demos, then now's your chance. Gold Disk's program gives you total artistic control over the entire production with full editing features available at every step.

If you don't like the way your video is shaping up, an entire character can be added, moved or eliminated with just a click of a mouse button – it really is that simple! MovieSetter frees the user from the drudgery that was once associated with the art of animation and lets you spend the time on the creative process itself.

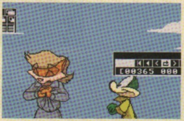
Here are the main powerful features that are available in *MovieSetter*:

- Stereo digitised sound.
- Backgrounds scroll horizontally and vertically.
- Full control over multiple colour cycles.
- Number of tracks only limited by RAM available.
- Tracks can be placed in production with a click of the mouse.
- Timing adjustable anywhere in your movie.
- Frame accurate editing.
- Frames can be looped.
- Tracks can be shifted in any direction.
- Tracks can be attached to guides for automatic spacing.
- Movies can use the overscan area.
- Fully featured editor set included.
- Backgrounds can be 'wiped' onto the screen in many ways.
- Cut and paste tracks and sets.

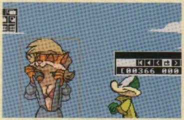
Your finished productions can be played back easily in real time. They can also be recorded onto video tape or transferred to disk using the freely distributable MoviePlayer (also included on our coverdisk).



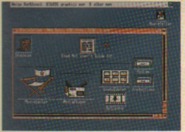
Each animated sequence is constructed from a series of sets laid on top of a background



Each set is animated individually, but needn't necessarily move in every frame, as with Flip here.



The background can also be animated by various scrolling and wiping effects.



This is what you will find on the MovieSetter disk.

OVERVIEW

Fortunately, creating simple animations with *MovieSetter* does not require a complete understanding of the program. More sophisticated operations, however, will require a knowledge of how *MovieSetter*'s various elements interact. You can read through this section quickly for now, but you may want to come back to it after you have completed the tutorial which appears later on.

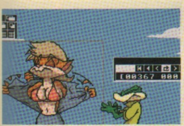
All *MovieSetter* Productions begin with IFF pictures (such as those drawn in *DPaint*). Pictures exist in two forms in *MovieSetter*: Backgrounds and Faces. Backgrounds always reside at the back of your scene, and nothing can ever be obscured by a background. A background can be as large as full video overscan (352 x 290 pixels), although editing is done on a normal 320 x 256 screen. During playback, the entire background is displayed. Backgrounds may be scrolled either vertically or horizontally, and are independent of other elements with the scene .

The second type of picture is a face. A face is a single image of an animated character or object. A Set is a collection of related faces in a logical order. For example, a set could contain all of the positions required to make a character walk, each face representing a snapshot of the walk.

If all of the faces from a set of a character walking were painted on clear plastic cards and laid out on a table, it would resemble a strobed view of that character's movement. Stacking the cards in a particular order and flipping through them quickly would give the effect of animation. Changing the order of the cards would affect the movement of the character, and copying some of the cards would affect the timing of the set.

SET EDITOR

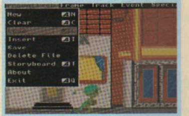
The Set Editor allows you to create the tools with which you will make your movie. While the order that faces are placed within a set does not constrain you in any way, it is convenient to have the faces follow a logical order. The set editor allows you to preview your set, animating the faces in the order that you created them. Your *MovieSetter* package comes with pre-drawn sets, so it is possible to create movies without entering the set editor.



The edit control allows you to step through the frames one by one for accurate control and testing.

LOADING A DEMO PRODUCTION

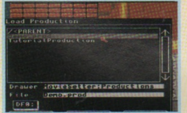
Completed animations are saved as 'Productions', which can easily loaded in to *MovieSetter* for editing.



Click on Load to load in the Demo production.

GETTING STARTED

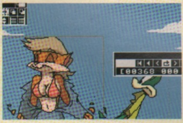
Once you have loaded *MovieSetter* you may like to take a quick look at an example production. Use the menus at the top of the screen and go to the far left one, called 'Production', and choose 'Load'. A requester will appear which is your prompt to select the Demo file. Make sure the CU Clip Art disk for *MovieSetter* is in a disk drive and select the Drive gadget such as DF0: or DF1:. Click on the drawer named 'Productions' and then double click on the file called 'Demo'. It should now load without further ado.



Drawer MovieSetter:Productions
File Demo.prod

Double Click on Demo.prod to automatically load in the Demo. Easy, eh!

Somewhere on the screen is a small requester which looks similar to VCR buttons. This is the Player Control window. The icons work the same way they do on a video recorder, so click on the play button and watch the Demo production. Hitting the space bar stops the production.



Each set can be altered simply by clicking it and moving it around the screen

PROTECTION CODES

page	line	word num	word
1	5	5	like
5	9	1	referred
6	4	6	necessary
7	7	4	loaded
8	2	11	movie
9	6	7	pictures
11	5	5	order
11	11	3	editor
12	5	5	changed
13	2	6	create
14	6	5	will
15	4	4	bar
16	4	6	menu
17	2	5	speed
19	5	7	carrying
20	6	4	saver
21	7	2	manual
22	3	6	insert
25	4	1	effective
27	4	3	specify
27	2	9	each
28	1	3	criteria
29	2	4	duplicated
30	2	3	obscured
30	3	3	what
31	5	8	road
31	6	2	would
32	3	2	overlap
32	4	4	placing
33	4	5	normally
33	3	2	return
36	4	4	scan
37	3	2	drawing
37	4	3	packages
38	3	8	until
39	3	3	repeat
39	3	8	filled
42	2	5	first
45	2	11	series
45	6	1	file
46	4	5	number
46	7	5	stick
47	3	6	into
47	7	4	need
48	4	3	outline
48	6	7	adding
49	3	3	practice
49	8	9	center
50	5	3	current
50	6	6	palette
51	2	3	limited
52	4	4	real
52	6	8	close
52	9	1	patience
62	2	7	results
62	5	2	free
9	4	2	quickly
7	5	5	parts
14	2	2	special
19	2	4	started
21	4	5	from
25	2	6	elements
1	3	5	minutes
36	2	4	quality

Using the set editor, however, you can create new sets from exisitng ones by taking advantage of its editing tools (e.g. sizing, rotation).

SCENE EDITOR

The Scene Editor is at the heart of MovieSetter. The highly interactive nature of the scene editor allows you to view productions as they will finally appear while you are creating them. The first step in creating a scene is choosing a background (though it may be changed at any time).
If you were creating a scene by hand, you would start with a painted background. At your disposal would be stacks of faces painted on a clear plastic, each stack representing a set. You would create the first frame of your movie by overlaying a single sheet from each set, with the background showing through the plastic where no image was painted. You would continue to do this for the lengt h of your film: a tedious, but inherently simple operation.

FRAME BY FRAME

MovieSetter works in almost the same way except that you create the movement of each character completely before starting the next. For example, if you wanted a dog to run across your background, chased by a cat, you would first create a track from your dog set (ie. all positions of a dog running) by starting at the left edge of the screen and clicking your way to the right edge. *MovieSetter* automatically adds frames as you create the dog's movement, and cycles through the set faces in the order that you created them. If it took twenty clicks to make the dog run from the left side to the right side of the screen, twenty frames will exist in your movie. A track contains much more information than a set. A set is simply a collection of images; a track is an ordered collection of faces from a set, with screen position and depth information.

SET EDITOR TOOLS

The set editor tools are located down the left hand side of the set editor screen. They control the various editing controls used in the creation of the animated sets.

Go to beginning of set: Places at the first face of the current set.

Go to previous face: Places you one face back from the one shown in the current set.

Preview set backwards: Cycles quickly through the faces in reverse to give you an idea of how the set looks when animated. Use the Up and Down arrow keys to alter the playback speed.

Stop preview: Stops the preview! You can also hit the space bar.

Preview set forwards: Plays the set forwards in real time.

Go to next face: Advances one face in the current set.

Go to end of set: Advances to the last frame in the current set.

Cut: Cuts the current face from the set and places it in the paste buffer.

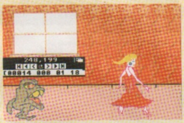
Copy: Copies the current face and places it in the paste buffer.

Paste: Clicking on the top half of this gadget places the face from the paste buffer before the current face in the set. Clicking on the bottom half will paste the face after the current face in the set.

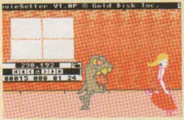
Insert face: Clicking on the top half of the gadget places a blank face before the current face in the set and clicking on the bottom half places a blank face after the current face.

Delete face: Erases the currently shown face from the set.

Register mark: This places registration marks on your animated set. The mark is a pixel where MovieSetter lines up the animation. It's also the hotspot that MovieSetter 'connects' the pointer to when you are laying down the set as a track.



Using the supplied Clip Art: Watch out lady!



Run for it, girl! You're about to get gobbled...

To add the cat's track, you would step through the movie to the point at which the cat would logically enter and click out its movement using the cat set. When creating the cat track, the cat is automatically forced in front of all other tracks in the current frame. This may be changed later, if you wish, when the track has been completed. *MovieSetter* is WYSIWYG (what you see is what you get): while creating the cat's track, the dog is still visible. When adding to your movies, you always see what you have previously created, making animation as simple as moving the mouse and clicking!

This concept of creating tracks parallels that of the multitrack studio used in the music industry. A single musician may play several instruments in a song by recording them as separate tracks and then overlaying them using a 'mixer'. The scene editor is essentially a mixer that integrates sets into tracks and overlays them to create scenes.
A conceptual complication of tracks is that it is only possible to view a single element of a track in a given frame. Tracks start at one frame and at some time later, end. A given frame is a snapshot of the track as it interacts with other tracks in the movie.

EDITING TOOLS

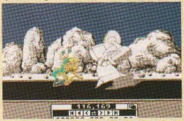
MovieSetter's editing tools have been designed to make changes to an entire track, or a single track element fast and easy. For example, an entire track may be repositioned by simply moving a single element within the track. 'History' allows you to show track elements from previous frames in the current frame (a strobe effect).

While tracks exist across many frames, 'Events' are attached to specific frames and initiate an action. There is NO LIMIT to the number of events that can occur within a movie. A background change updates the background with a new picture but does not affect the tracks in that frame. A sound event begins in a specific frame, but ends some time later (depending on the length of the sound and the complexity of the movie). A palette event causes the colours to change until another palette event or background change occurs. Other events are background scrolling, timing, colour cycling, and loops.

While all of this may seem complicated now, you will see in the tutorial that ALL of these actions may be performed by the simple act of moving the mouse and clicking!

TUTORIAL

This tutorial is designed to clarify the terms we've introduced (face, set, background, track, event) and help you create your first animation. So buckle up and let's go for it!



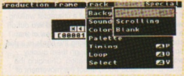
The Walker confronts the martian. Simply two tracks stamped down on the same background.

CREATING A PRODUCTION

We'll create a simple production of our own using some of the clip art that comes on the CU coverdisks. Before we load any of the individual elements, let's select Project/Clear to clear anything that already might be in our production.

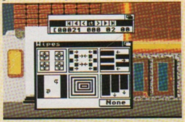
LOADING A BACKGROUND

The first thing that you should add is a background.



Loading a background from the Event/Select menu.

Go to the Event menu and choose Background/Select. This will bring you to the Load Background requester. There are a series of backgrounds in the Backgrounds directory on the disk with the MovieClips. Double click on the one called 'TutorialBackground'. This will automatically load in the picture from the disk, and place an event in the first frame. This tells *MovieSetter* to change backgrounds at the first frame. Unless we add another background change event, this will be the background for the length of the movie.



The wipes window: Choose None if you are following the first tutorial.

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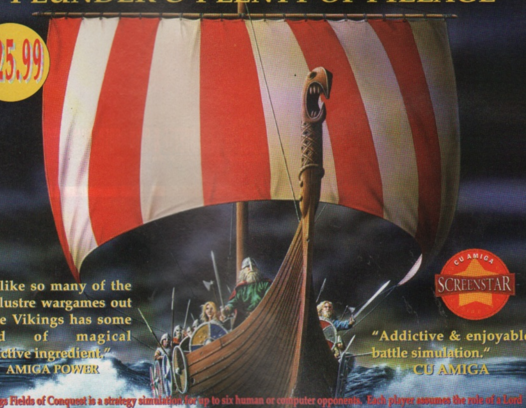

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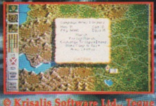
Kingdoms of England II



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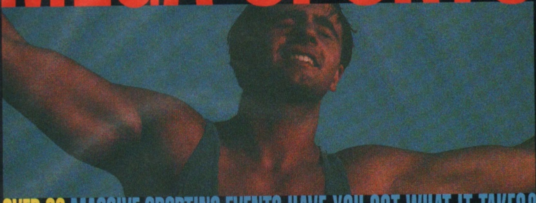

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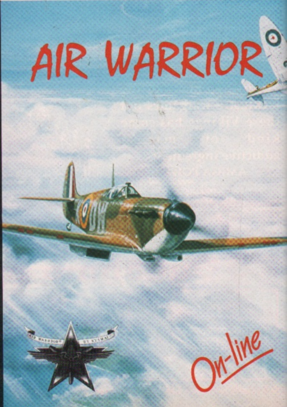

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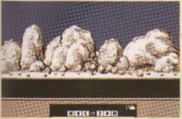
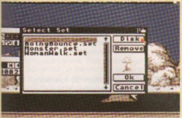
Before the background appears, MovieSetter allows us to choose a wipe effect for the background. This wipe will take place when the background enters our production. The Wipe requester will appear and ask us to select the type of wipe that we want to use. MovieSetter comes with many special wipes built in. If you choose "none" there will be a direct cut to the new background picture. Since we are in the first frame of our movie, select "none". The background for your animation will now appear.

CREATING A TRACK

Our background looks a little barren so let's spice things up a little by creating our first track. Remember that tracks draw their imagery from sets of faces. *MovieSetter* comes with pre-drawn sets so we won't bother to create one from scratch for this animation.

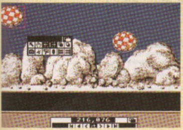


What you sould see after loading the Tutorial background.



Click on Disk from the file menus to check out the disk contents, else it shows what's previously been loaded.

Go to the Track menu and choose New. 'New' lets *MovieSetter* know that you are going to add a new track. This will bring you to the Set Load requester. There are a series of sets in the 'Sets' directory which is again on the CU coverdisk. Double click on the one called 'BoingBounce'. This will automatically load that set in from the disk. You will now have a small 'Boing Ball' attached to your pointer. This is the object that we are going to animate.



Stamp down the ball on the current frame several times in a logical path.

Move the pointer to the far top left of the background. The real power of MovieSetter is that every time you click the left mouse button, the current object gets placed onto the current frame. This process is called stamping. Every time you stamp, the set also advances by one face. This set was created to make Boing Ball look like it's rotating. Let's try it.

Stamp out a few frames in a path from the top left down to the centre of the road. Stamp out a few more going in a path from the centre to the top right of the background. To complete the track, hit F5 on your keyboard or hold down the Control key when stamping the last frame of the track.

PLAYING A PRODUCTION

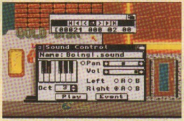
When your want to play your production use the player control window.

Select the Start Movie gadget to 'rewind' to the first frame of the production. Select the Play Forward gadget to play the production. Press the space bar to stop the production at any time.

ADDING A SOUND

Let's add a sound to give our production a real 'cartoon' feel. There are a number of great sounds provided for you on the CU coverdisk.

Rewind the Production. Using the Player Control Window, step through the frames until you reach the frame where the boing ball is bouncing off the road. Choose 'Sound' in the Event menu. This will take us to the Sound requester. Double click on the sound called 'Boing!' to load it into the production.



Name: Boing!.sound

Oct 3

Left ○A ○B

Right ●A ○B

This is what the sound control window looks like.

Before the sound is loaded into the production we are placed in the Sound Control window. We'll return to the special sound effects that can be performed here later, but for now just click on the Event button. This tells *MovieSetter* to play the Boing! sound when it reaches this point of the movie. To hear the sound without creating an event, press the Play button. Remove the sound control window by pressing its close gadget (like closing a window on Workbench).

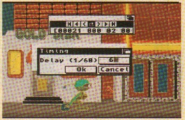
IF YOUR DISK WON'T LOAD...

In the unlikely event of your CU disks not loading, remove all cartridges and peripherals and try again. If it still won't load, pop it in an envelope and send it to: CU DISK RETURNS, PC WISE, MERTHYR INDUSTRIAL PARK, PENTREEBACH, MID GLAMORGAN, CF48 4DR. They will then test your disk and send a replacement as soon as possible. For any urgent problems, though, please ring the PC Wise helpline on (0443) 693233 and this line can be reached between the hours of 10:30 and 12:30 during weekdays. Whilst CU AMIGA makes every effort to check our Coverdisks for all known viruses, we can accept no responsibility for possible damage caused by viruses which may have escaped our attention.

Play the production again to hear the new sampled sound. Sound adds an extra punch to any *MovieSetter* production. (Imagine a Bugs Bunny cartoon without sound – yeuch!)

CHANGING THE TIMING

Changing the timing lets us slow down or speed up the production. *MovieSetter* works on a scale that breaks every second down into 60 parts. (Actually 50 in Europe because we use a power supply rated at 50Hz, not 60Hz.) The default setting for *MovieSetter* is 6/60th or l0 frames shown by the player for every second of real time. The timing value tells MovieSetter how long to delay between each frame. For this example, let's slow the film down to 4 frames per second.



Delay (1/60) 6

The timing window: See the Table for more information about timing figures.

TRACK EDIT WINDOW

The way to get your sets actually animated on the backdrop is by creating a track. The Track edit window contains all the controls for bringing life to your sets.

Select Track: Choose the pointer icon and then select the face which is in the track you want to edit.

Move Track: Use this to reposition the current track as a whole or just the visable track element.

Insert Elements Before: This creates new elements in the currently selected track before the current frame.

Insert Elements After: The same as Before but this inserts the new elements after the current frame.

Track Behind: Moves the currently selected track back one position in the current frame. Double clicking on this icon positions the current track behind all other tracks in the frame. Holding down the ALT key will perform the operation from the current position in the track to the end.

Track In Front: The reverse of Track Behind.

Copy Track: Copies the selected track into the paste buffer.

Cut Track: Copies the selected track into the paste buffer and also removes it from the production.

Paste Track: Places the track currently in the paste buffer into the production at the frame and location of your choice.

Change Face: This changes the face that is visible in the currently selected track. Use the next or previous arrows on this icon.

Go To Beginning Of Track: Jumps to the frame containing the first track element of the currently selected track.

Go to End Of Track: The same as above but this time it jumps to the end.

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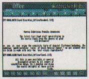

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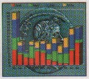

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Rewind the production to the first frame by using the *MovieSetter* player control. Choose 'timing' in the event menu. This takes us to the Timing requester. Click in the Delay box. Now enter the number 15. Press return to leave the Timing requester. Play the production to watch it at 4 frames per second.

TIMING NOTES

MovieSetter uses the 60th of a second scale because this is the number of times your monitor refreshes or 'draws' the video image every second. *MovieSetter* plays the productions at a default setting of 10 frames every second because most people cannot distinguish separate frames at a faster rate. This is very close to the frame rate used by the classical animators of the thirties and forties. Below 10 frames per second the animation will tend to appear jerky. For example, the popular television animation that is produced in Japan (Japanamation to the fans) is often shown as slow as 4 frames per second. This accounts for the noticeable gaps in the animated movement. You may be satisfied with this timing speed as it means less drawing work for you, yet it is still smooth enough to be acceptable. Animation purists will stick with the faster rate of 10 frames per second. Use the scale below to convert *MovieSetter's* timing to frames per second.

It is important to note, however, that *MovieSetter* cannot guarantee the playback speed. For movies of moderate complexity, using 32 colours, it is likely that 10 frames/sec is realistic. However, when large sets are used or many tracks overlap, MovieSetter may not be able to keep up with the timing you specified. Speed of playback is also affected by the presence of a background, sound, scrolling and the number of colours. If you simply wish to do a pencil sketch animation, running *MovieSetter* with only two colours will aloow animations up to 60 frames/sec.

Timing is an event. This means that the new timing will remain in the productions until you decide to change it. You can slow the beginning of a production to slow motion and then through successive timing events you can slowly speed up the animation until you reach the speed that you want.

DELAY FRAMES PER SECOND

1	50
2	25
3	16
4	12
5	10
6	8
10	5
15	3
20	2.5
25	2
60	1

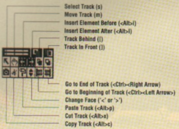
NB: MovieSetter uses NTSC timings so we converted the numbers to the nearest PAL frame rate.

ADDING A NEW TRACK

We have already produced a simple production with a background, an animated track and sound! Now let's add a second track to the production. Rewind the production. Advance to the frame just before the ball hits the road. Choose 'New' under the Track menu. Select the ball again.

The ball set is now attached to the pointer. Stamp out the new track in roughly the same way that you placed the first bouncing ball. When this ball leaves the screen, rewind to the place where the new ball track hits the ground.

Add the 'boing' sound to this new track. Play the productions to see the two separate balls chasing each other down the road. To see a working version of all this, try loading 'TutorialProduction' and playing it.



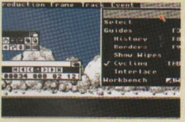
The track edit window, showing the functions and their shortcut options in brackets

SET CREATION

The key to creating effective productions with *MovieSetter* is making your own animated characters with the set editor. A set is a se ries of faces that you combine together, *MovieSetter* let's you play them back in any way you wish. For example, imagine that you hav e drawn several pictures of the different positions of a walking person. Using the set editor you can easily combine the separate pi ctures into one file which *MovieSetter* will show you in real time. Let's create a simple set of our own. (It's a lot simpler than it sounds, so don't be shy...)

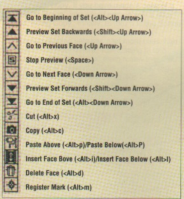
SET CREATION TUTORIAL

Choose the Set Editor menu item from the *MovieSetter* main screen. This puts us into the set editor. We will start a very simple set, a stick man jumping up and down. (Not too much of a brain strain, eh?)



The Set Editor can be found in the Special menu.

Choose New from the Set menu. Enter a name for the character and press return. Select the Oval tool and draw the stick man's head. Use the Line tools to draw the body, arms and legs. Select the registration mark and place it in the centre of the character's head.



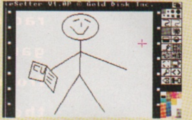
Go to Beginning of Set (<Alt><Up Arrow>)
Preview Set Backwards (<Shift><Up Arrow>)
Go to Previous Face (<Up Arrow>)
Stop Preview (<Space>)
Go to Next Face (<Down Arrow>)
Preview Set Forwards (<Shift><Down Arrow>)
Go to End of Set (<Alt><Down Arrow>)
Cut (<Alt>x)
Copy (<Alt>c)
Paste Above (<Alt>p)/Paste Below(<Alt>P)
Insert Face Bove (<Alt>i)/Insert Face Below (<Alt>I)
Delete Face (<Alt>d)
Register Mark (<Alt>m)

The set editor gadget list (and shortcuts).

This is the first face of our set completed. We need two more to finish off this animated set. Since our character is only going to change slightly in each face, we can copy him directly and make the alterations as we go. (Pretty neat time saving stuff, then!)

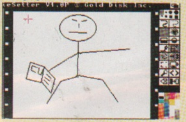
Select the 'Copy Element' tool. This places a duplicate of face number one in the paste buffer. (Just like a word processor but with graphics instead.)

Select the lower half of the "paste below tool". This copies face number one to face number two.Select the colour to be the same as the background colour and use the drawing tools to erase the stick man's arm and legs. Select the colour of the stick man and draw in a new pair of arms and legs in a position that is a little higher than face number one. Repeat the last three steps to copy face two to face three. Redraw the arms and legs again, a little higher than before. (Not too high because we can't be held responsable for any physical mishaps your stick man may endure!)



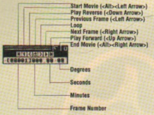
Creating your stick man animation in the Set Editor.

Play the set using the 'preview set forwards' tool. This flips through the set in real time and lets you see how our animated set is going to look. When you are finished click once on the 'stop preview' gadget.



Draw your own sets, change the ones on the disk or load some in from another art package.

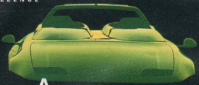
Save the stick man set by choosing 'Save As' under the Set menu. If there is no room left on the MovieSetter disk then save onto a b lank formatted disk of your own.


Start Movie (<Alt><Left Arrow>)
Play Reverse (<Down Arrow>)
Previous Frame (<Left Arrow>)
Loop
Next Frame (<Right Arrow>)
Play Forward (<Up Arrow>)
End Movie (<Alt><Right Arrow>)
[00001]000 00 00
Degrees
Seconds
Minutes
Frame Number

The player control window showing keyboard shortcuts.

LOTUS III

THE FINAL CHALLENGE



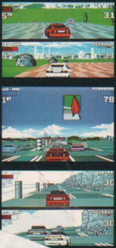
A racing game from the « future »

incorporating RECS
racing environment construction system

Lotus III is the ultimate racing experience. incorporating the awesome power of RECS , a revolutionary concept giving you the power to generate a virtually infinite number of unique racing scenarios, The Final Challenge is ready to give you the drive of your life.

LOTUS

- A vast range of landscapes and weather conditions.
- Race the Esprit, Elan or futuristic Lotus M200.
- Choose racing circuits or stages.
- Test yourself over 64 built-in courses or use the power of RECS.



GREMLIN

Magnetic Fields Software Design

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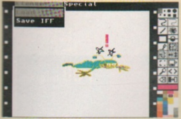


Draw your own sets, change the ones on the disk or load some in from another art package.

We can now call up the stick man and use him as an animated figure in our *MovieSetter* productions. You may want to experiment on the set since you have a permanent copy safely saved on to a disk, haven't you? Go to the beginning of the set and use the fill control to fill in stick man's head. Add hands and feet, perhaps a moustache or a beer belly. Try drawing a face on him as well. Preview the set often to make sure that the animated set is turning out the way that you intended it to. Remember that if you slip up when you are drawing you can use the Undo tool to remove the last mistake. If one of the faces is beyond repair you can delete the current face by selecting the Trashcan tool.

SET CREATION FROM IFF FILES

There are other ways of creating faces that make up an animated set. You may feel more comfortable using one of the existing Amiga paint packages such as *Deluxe Paint*. If you have saved all the original pictures, as IFF pictures or brushes, you can load them directly into the set editor bypassing the built in drawing tools.

SETS FROM PICTURES

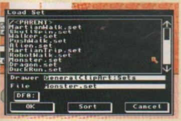
If you have more than one face in a picture file: Choose 'New' from the Set window. Type in a new set name. Select the 'load custom brush from disk' tool. When the requester appears, select the correct path and picture file.

The picture is now loaded into the clipper. Use the rectangular or freehand brush tools to select the area that you want to place in the drawing area. Remember that you can resize the window and move the picture around with the left mouse button if you need to. Clip the area and stamp it into the drawing area. Select and place the registration mark.

Select 'load custom brush from disk' to return to the picture in the clipper.

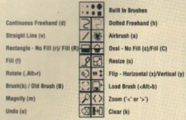
Repeat the last three points as many times as you have to. You can clip from more than one IFF picture if you please.

Choose 'Save As' from the Set menu to give the new set a name and save it to disk for safe keeping.



```
/<PARENT>
MartianWalk.set
SkullSpin.set
Walker.set
PushWalk.set
Alien.set
MartianTrip.set
RobotWalk.set
Monster.set
Dragon.set
DuckRun.set
Drawer GeneralClipArt:Sets
File   Monster.set
DF0:
```

We've given you loads of exciting tracks to get you started.



The set editor graphic tools and their keyboard equivalents.

SETS FROM BRUSHES

If you want to use IFF brushes as the faces in your sets:

Choose 'New' from the Set window. Type in a new set name. Choose 'Load IFF' from the Element menu. When the requester appears, select the correct path and picture file. The picture is now loaded into the drawing area. MovieSetter loads it automatically into the upper left hand corner.

Select and place the registration mark. Select 'Add a new element below' to advance to the next face in the set. Repeat the last three points as many times as you have to. You can load as many IFF brushes into the set as you want. Choose 'Save As' from the Set menu and give your new Set a name and then save it to disk.

ALTERING AN EXISTING SET

Sets that have been saved can be called up at any time and changed in the set editor. Let's do some quick alterations to one of the sets that's already on the disk. Choose 'Load Set' from the Set menu. Select the 'Boing_Ball' set and load it in. Boing_Ball now appears in the drawing area. Use the Preview tools to scroll through the animated set. When you are finished return to the first face. Add an outline ellipse to the outside of the ball. Go to the next face and add a new ellipse of a smaller size. Keep advancing through the set and adding smaller and smaller ellipses until you reach the end.

Preview your new set. With any luck your ball should now have a sort of 'atomic' feel to it. If not, load it back in and try again. If it looks the way you want, save it to disk under a new name such as 'Boing_Atomic' or something. Try adding a face, antennae or even feet to the ball. Loosen up and go wild with your imagination!

You can also make a duplicate of a set by selecting Set/Copy. If you have made a copy of a set named 'Boing', you would end up with a copy named 'Boing Copy'. Finally, to return to the Scene editor, select Set/Exit from the menu.

Altering existing sets has a lot more uses than the couple mentioned here. Just loading in and recolouring old sets will give them a new feel. You can save sets at different stages. (Saving at regular intervals with any software package is a recommended action, just in case of a power failure or a system crash.)

NEXT MONTH:

The fun continues next issue when we get on to more advanced animation techniques and explore the program's full capabilities. Be here in 30 for the lowdown.

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*Lotus 3 coder, Shaun Southern, comes up trumps this month, as he unveils our exclusive Amiga version of his old C64 blasting classic, Pod. We also present a playable demo of DMI's platform bash 'em up, Catch 'Em, whilst Ronald 'SWIV' Weeserik gives us Q*Bert clone, QBic.*

41

COVERDISKS

DISK 41

POD: Complete game! Exclusive Shaun Southern conversion of this great C64 classic

QBIC: Complete game! Brilliant Q*Bert clone from the writer of SWIV

CATCH 'EM: Five levels of beat 'em up mayhem

MAZE: Can you escape from this deadly 3D maze

Plus the best Public Domain games!

CU AMIGA

POD full game!
QBIC
CATCH 'EM

POD – FULL GAME

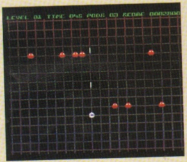
Before he made his name on the Amiga scene with the excellent *Lotus* series, Shaun Southern was one of the most renowned budget games writers on the good old C64. Starting with the classic *Kikstart* motorbike series, he then produced a blistering shoot 'em up which soon amassed something of a cult following. And now, CU Amiga is proud to present Shaun's Amiga conversion of the game which kept thousands of C64, C16 and Amstrad owners busy – *Pod*. Yep, that's right, once we feasted our eyes on this polished shoot 'em up, we reached for the ol' cheque book and promptly bought the publishing rights to the game. Over the next few months we've got a whole host of full-length games on offer, some new versions of old classics, others totally original games that wouldn't look out of place on the shelves of your local software emporium.

Pod is an incredibly fast-paced game set in the timeless void of space. Your circular craft is positioned on an electronic grid which is suspended in space providing a surface for intergalactic combatants to engage in battle. The tiny craft is restricted to moving along the power lines of the network, but can shift anywhere on the screen, providing there's an available route to the desired destination. The power provided by the cables allows you to zip around the area at a blistering pace, which you'll be all too glad of when the scores of alien invaders start to circle your ship.

There are sixteen different makes of alien craft, and each features its own attack pattern. The elaborate formations swirl all over the place and, in later levels, they mix and match their forces and begin to spew forth an incredible amount of flak for maximum confusion and devastation. Not content with this, the invaders also have one more trick up their sleeves (if aliens have sleeves, that is). When you do manage to blast one, the resultant explosion takes away a portion of the grid with it, which prevents you from moving over the damaged spot. All is not lost, though, as the grid will repair itself, albeit quite slowly when there is a lot of damage.

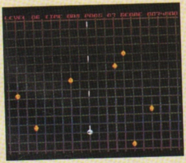
LOADING DISK 41

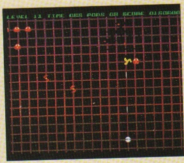
Simply place the coverdisk in your drive and turn on the power. You'll then be presented with a choice of five game icons: *Pod, Qbic, Catch 'Em, Mr Wobbly* and *Maze*, so just select the one you want to play. Your menu should boot up almost instantaneously, but in the unlikely event that it doesn't please direct all enquiries towards PC Wise, whose number can be found elsewhere on the coverdisk pages.

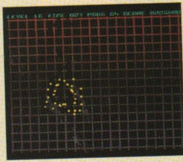


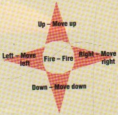
You start the game with three lives, but are awarded an extra one after each level is completed. There's no need to kill all the aliens as they have a time-limit imposed on them and will explode when it reaches zero. It's a real test of reflexes and coordination, and you won't find a faster game to play anywhere.

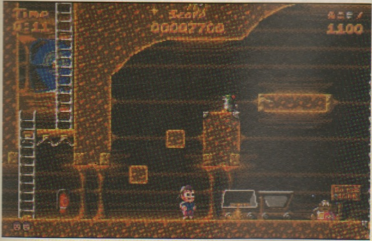
Altogether, there are 100 levels to blast your way through, each one more difficult than those that preceeded it. We doubt very much whether anyone will reach the final stage, but if you do, send us a screen grab and we'll give a small prize to the first to do so. If, on the other hand, you've got the playing skills of Steve Merrett (i.e. none whatsoever), then we'll be publishing a cheat to the game next issue which will instantly give you access to all 100 levels. Until then, happy blasting, and watch out for more full-games from CU AMIGA very soon!











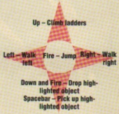
CATCH 'EM – PLAYABLE DEMO

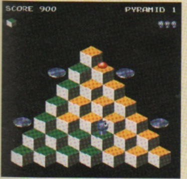
DMI

Catch 'Em is a fully playable, multi-stage romp of massive proportions. It's slightly reminiscent of those old 'Game'n'Watch' affairs you see displayed in toy shops, but its simplicity belies some extremely fast-paced action.

Hundreds of apes are roaming around your home town causing havoc and mayhem. Cast as the local monkey catcher, it's your responsibility to capture the escapees and return them to their cages. The monkeys are not easily caught and, although a few can be stopped in their tracks with a quick bump on the head delivered from a bat, others have to be distracted with jellies and the like before you can sneak up on them and bash them on the bonce – it's certainly not a game for members of Greenpeace, I'm afraid to say. If you can't find the relevant piece of enticement kit for the coshing job, a quick visit to your van might produce the correct item. It also holds spare essentials like baseball bats and extra jellies, which should make your unenviable task a little bit easier. One word of warning, though, the objects at your disposal don't last for ever, so speed is of the essence.

Another worrying factor of your task is that the furry fiends aren't totally defenseless either and, apart from coming in a variety of sizes from chimps to fully grown gorillas, they also tend to leave banana skins everywhere causing your on-screen alter ego to slip and land flat on his back – wasting valuable seconds. Each round is played against a strict time-limit, and whilst progress around the screens is speedy, the Catcher should use the conveniently-placed platforms to reach other parts of the screen...


Up – Climb ladders
Left – Walk left
Fire – Jump
Right – Walk right
Down and Fire – Drop highlighted object
Spacebar – Pick up highlighted object



SCORE 6750
PYRAMID 2

SCORE 13625
PYRAMID 3

QBIC – FULL GAME

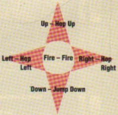
Qbic could quite easily be coupled with such computer classics as *Tetris* and *Pacman*. Not only is it extremely simple, but it's so addictive you'll have to rip your hand away from the joystick in order to dabble with all the other fantastic stuff we've compiled on this month's cover disks.

The game is loosely based upon the arcade classic, *Fuzzball* (AKA *Q*Bert*), and has been written by Ronald Weeserik. Ronald's no stranger to writing classic games on the Amiga and a few of his most recent smashes are *Silkworm*, *SWIV* and *Rodland*. Even today, after an illustrious line of brilliant shoot 'em ups, Weeserik still claims *Fuzzball* to be his favourite.

The idea is to guide a blobby little sprite around a three-dimensional pyramid by hopping from square to square and lighting up all the cubes in the structure. There are 28 squares to light in every pyramid and every square must be coloured in order to make it to the next level. Some of the blocks in future stages have to be landed on more than once and the 3D perspective coupled with the nasty blobs and coiled snakes that career along the pyramid's surfaces make it progressively harder to reach the next stage.

It all sounds very simple, but Ronald has included some devious nasties to compete with your sprite. Bubbles roll down the pyramid from top to bottom, whilst other similarly-shaped creatures may roll down AND move from side to side. One globe even hatches into a snake and can spring back up to the top in order to pursue you. Only by using some incredible joystick combinations and jumping out of danger onto one of the teleportation disks which line the side of the pyramid will you complete every level.

Amazingly, Weeserik has chosen to release *Qbic* onto the bulletin board circuit, and is not hoping to make any money out of the venture. However, if you enjoy playing the game, it's probably only right to reward him with some kind of monetary sum.



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Screen shots from Coin-Op version.

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Screen shots are intended to be illustrative of the gameplay and not the screen graphics which vary considerably between different formats in quality and appearance and are subject to the computer's specifications.

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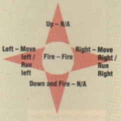
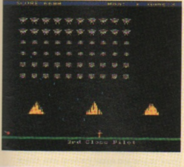
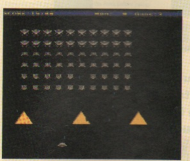
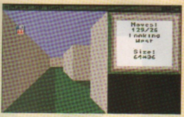
MR WOBBLY – FULL GAME

The full title of this game is *Mr Wobbly Versus The Invaders From Space* and there's no prizes for guessing that those famous pixelised alien bugs are going to make an appearance in here somewhere. Controlling Mr Wobbly you must run from one side of the screen to the other to collect a token which will award you with a feature necessary to combat the alien menace. Mr Wobbly must then run back to the other side, avoiding the ever-increasing barrage of Space Invader fire to flick the huge switch that produces another bonus for you to collect. Repeating the process a number of times rewards you with all kinds of features that will be strapped onto your traditional craft for the blast that follows. The more tokens you collect in this fashion the more chance you'll have of living through to the next round. The frantic dodging antics coupled with great sampled sound effects are what make this game so addictive. We know it's got awful graphics, and the world really doesn't need another *Space Invaders* clone, but this is great fun!





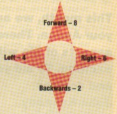




MAZE – FULL GAME

Ever wandered lost and forlorn around Hampton Court maze? If not, then you can do so in the privacy of your own home – and if you get totally lost at least you can switch off your Amiga in frustration!

Maze is (surprisingly) a very fast-moving 3D maze (never!) game. The idea of the game is to try to get out of the winding labyrinth as quickly as possible using as few moves as you can. Use the arrow keys on the numeric keypad to move around the maze. You can select different maze levels from the menu running at the top of the screen or even get the computer to complete the maze for you whilst you watch.



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DIY

DO IT YOURSELF SPECIAL

This month, we are giving you the chance to enhance your Amiga. There are projects galore to make all aspects of life with an Amiga that bit easier or more exciting. To aid you in your quest for home-made gadgets and devices, John Kennedy will be your guide through five pages of fabulous fixes, fudges and formulas. Read the warnings, trust in God, and keep your solder dry...

THE RIGHT STUFF

Before you begin you will need:
Soldering Iron. A mains operated, 15W iron with a fine bit is best. Use emergency car repair irons only to repair cars in emergencies. Some folks like 'solder guns' which have little lights on them and pistol grips. I don't. Just give me a little spiral holder with a damp sponge and a small yellow iron and I'm happy.

Wire cutters. Don't use your teeth!

Pliers. Very useful for holding and bending.

'Helping Hands'. Invaluable – a weighted collecting of crocodile clips and magnifying lenses to hold your components as you solder.

Multi-meter. Also invaluable for checking for proper connections, confirming voltages and testing components. Starting at less than £20, they should be made compulsory.

Set of Screwdrivers. A bit obvious really. Jeweller's screwdrivers are excellent for these projects as even the smallest sizes have tough precision heads.

Craft Knife. Can be dangerous, so take care, but is also very useful for cutting veroboard or cutting tracks. As in Blue Peter, be careful not to cut yourself (get a parent to help!).

PROJECT 1: PAUSE SWITCH

Suitable: A500
Difficulty: Easy

This is by far the easiest project to make, and it will probably be the most useful too! Imagine that you can instantly stop any Amiga in its tracks – for a minute or an hour – no matter what it's doing. The possibilities are endless:

- Pause any game or program, independently of any pause option in the software.

- Cheat at games by getting a good look at new levels well in advance of any nasties.

- Stop your own programs to examine what they are doing. Useful for debugging.

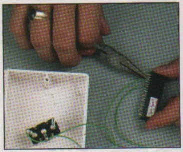
INGREDIENTS

1 On-off toggle switch (perhaps a footswitch for 'hands free' operation)
1 Short length of 0.1 pitch edge connector. It should have at least 32 pins on it.
2 Short lengths of wire.

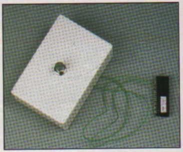
INSTRUCTIONS

Strip about half a centimetre of the insulation from the wire and tin the ends with a little solder. With the edge connector in front of you, the solder pins to the left, and the side which clips onto the Amiga to the right, count 13 pins away from you. Solder one wire to this pin. Then, from the start again, count 16 pins and solder the other wire. Check this with the diagram.

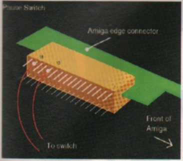
The ends of the wires should be soldered to the switch. It makes no difference which terminal of the switch is connected to which wire. To con-



It is vitally important to make sure that all the pins on the edge connector are straight and not touching each other, otherwise all sorts of nasty things may happen.



The finished product. Intstalling it in a box makes it just that bit more professional-looking, not to mention more robust.



This diagram shows the necessary pin connections for the pause switch's connector.

IMPORTANT!

The downside to all this wonderful messing around with soldering irons and integrated circuits is simple – not only could you give yourself a nasty burn, but you could break your Amiga. Although unlikely, in the event of either event taking place, neither CU Amiga nor the authors can be held in any way responsible. To make sure that nothing does go wrong, please read the following points.

- Mains electricity can kill. None of the CU Amiga projects require any connections to the main electricity supply, SO DON'T MAKE ANY! If you need an external power source, buy a transformer from any High Street electrical or toy shop. A transformer (and here we're talking about a moulded plastic, prefused box with three-pins to stick directly into the wall – not the lump of iron and copper wire taken from the back of an old telly) will convert the potentially deadly high current 240 Volt mains into a cute and cuddly, several hundred milliamp 4-12 Volt supply.

- Static electricity can kill your chips. The same harmless electricity that can make your comb pick up pieces of paper, or gives you a shock when you get out of a car on a hot day, is fatal to chips. Even a small charge of static electricity can be many thousands of volts, and if discharged through a computer can bring tears to the wallet.

- Try to 'ground' yourself by wearing an earthing strip connected to earth. At the very least, touch a radiator or piece of electrical equipment with an exposed metal surfaces every so often.

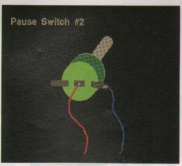
- Don't handle ICs by their legs.

- Don't wear rubber soled shoes and shuffle around on a nylon carpet.

- Opening the case of your Amiga may invalidate your warranty. This means that you won't be able to run to Commodore should anything nasty happen. You also won't be able to run to us, as CU Amiga takes absolutely no responsibility if you decide to invalidate your warranty, and the projects should be undertaken with this firmly in mind.

nect the pause switch to your Amiga, first power down. Now remove the edge connector cover on the left hand side of the Amiga. Put the cover in a safe place in case you need it again! Clip on the connector, so that the wires can be seen on the upper surface.

The connector should be as far forward – towards the front of the Amiga – as possible.



The top side of the RomSwap vero layout. Make sure all the connections are made accurately and test the links before using.

Switch on your Amiga. If nothing happens, flick the switch. If nothing continues to happen POWER DOWN IMMEDIATELY. Check the edge connector and make sure you have soldered the wires to the correct pins and fitted the connector correctly. When you have your normal 'insert Workbench disk' screen, pop in your favourite game and wait for it to load. Once there is something moving on screen flick the switch – everything should freeze! Although you can freeze your Amiga at any time, it is probably not the best idea to do it when disk access is occurring. Otherwise feel free to stop anything and everything!

HOW IT WORKS

One of the pins in the Amiga's 68000 CPU is called HALT or (HLT). When this pin is grounded, the CPU simply stops working. Our switch connects a ground wire and the HALT signal via a switch. When the switch is on, the CPU halts. When the switch is off, the CPU carries on.

OTHER AMIGA OWNERS

A1500, 2000 and 3000 owners should be able to modify the instructions to allow a freeze switch to be fitted to their computers. Instead of an edge connector, a piece of 0.1 pitch veroboard can be used, and the wires from the switch soldered to it. The board can then be plugged into one of the Zorro slots inside the Amiga's case, and the switch brought to one of the blanking panels at the rear.

EXPANSION

It is possible to expand this project into a slow mode with a minimum of extra components. To slow the computer down instead of actually stopping it the halt line is pulsed instead of held down. All you need to do this is a simple oscillator circuit, which we will be showing you how to make in a future issue.

PROJECT 2: ROMSWAP

Suitable: A500, 2000
Difficulty: Tricky

With the release of Kickstart 2 (and the option of Workbench 2), Amiga owners have a choice of Operating Systems. Sure, Workbench 2 is a major improvement, but what if your favourite games stop working on your Amiga 500 Plus? Or if you want to occasionally use WB2 on your standard A500, but still want *Music-X* to work correctly?

You want a ROM Swapper, that's what you want. OK, so you can buy one from any one of countless advertisers, but why not save yourself some dosh and build one yourself? If you do, you could save the price of the new ROM!

INGREDIENTS

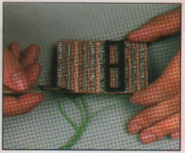
1 Piece of veroboard
(at least 22 strips by 32 holes)
3 40pin DIL sockets
1 Double pole, double throw switch DPDT
Lots of lengths of short wire
1 New Amiga ROM

INSTRUCTIONS

Building a device which selects between one of two ROMs is a doddle – if you can make your own Printed Circuit Board (PCB). The problem is that there are forty connections which must be carried from one side of the circuit to the other, and that is a lot of hassle.

The design detailed here is nothing more than the simplest way possible, but once you see how the circuit works, you will probably want to design your own. For example, a form of stacking system will save space and allow many more ROMs to be added. Furthermore, owners with accelerator cards and/or A2000s will have to use a 40-way ribbon cable to reposition the circuit well out of harm's way.

To build the ROM switch, start by making holes in the board as shown by the little Xs in the diagram. There are 61 holes, so if you have the official veroboard hole-making machine – called a Spot Face Cutter – you'll save yourself a lot of time.



It may be messy but it does the job. The tracks should ideally be cut with a spot face cutter, but a sharp knife will do.

Be sure to use longer wires if you want to be able to get the ROMs in and out easily.

Next, solder in the first two sockets – ROM socket 1 and 2 on the diagram. Pay particular attention to their position with respect to the holes. The third socket is a tricky little chappy, and I'll explain why.

We really don't want this third socket, what we really want is something completely different. Somehow we need to connect our circuit board to the empty ROM socket on the motherboard. The

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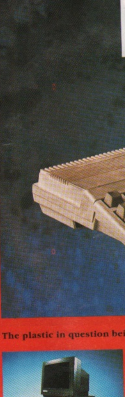

Monitor not included

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DIY

best way is to use something designed for the job – like a 40-way IC Header, with ribbon cable. Unfortunately, these are a little difficult to get hold of and so some cunning is required. By taking each pin out of the DIL socket in turn and bending the part which normally holds the IC pin in place to the side, you can splay the legs out far enough to allow them to be soldered directly to the veroboard. It's not a very elegant solution, but it works (figure 2). You might like to try using some special Wire Wrap DIL sockets, which should have long enough legs to pass through the board, be soldered and still fit into the motherboard socket. It all seems a bit Blue Peter, but the best hardware projects always are.

Once you have finished with the three sockets, it's time to start soldering the wires into place. The wires must bring pin 1 of ROM 1 to Pin 1 of ROM 2, pin 2 of ROM 1 to pin 2 of ROM 2 and so on. The only exception is pin 10 – don't solder any wires there yet. The wires are not drawn on the diagrams because they would clutter it up too much, so some of your common sense is required at this point. Remember to use long enough pieces of wire to allow both ROMs to be seated in their sockets. Use figure 3 to sort out the pin numbers.

Four longer wires need to be soldered to the circuit board and brought to a switch. The switch must be a special type (not just On/Off), and must have a little wiring done to it. See the diagram. When the solder has cooled, fit the ROMs in their sockets. One ROM will come from the Amiga motherboard, the other from the friendly mail order ROM stockist. Use a gentle levering action with a screwdriver to obtain the first ROM, and any major credit card for the second. Or should that be the other way around...

In any case, when squeezing them into place, make sure that none of the legs have bent instead of fitting into the socket. If they have, bend them gently back into shape. The pins are flexible, but they're not like Captain Scarlet (indestructible). Check out the caution on static, or you might end up paying for another ROM.

Plug the board into the gap on the motherboard. For some reason (a dead-end expansion idea?), some Amiga ROM sockets have 42 pins instead of 40. If this is the case, keep the two pins nearest the back free. Check the white writing stamped on the motherboard near the socket for more details.

Switch on! If nothing happens, switch off immediately and check everything thoroughly. Try flicking the switch (with the power off!) and seeing if that makes a difference. If it does, one of your ROMs is working, the other isn't: check the wiring. If the floppy disk drive makes grinding noises, you have either the ROM board or the ROMs themselves in upside down!

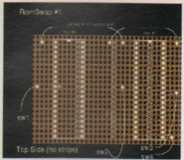
You may want to make a small hole in the Amiga's casing to mount the switch. Leaving it to dangle out of the side of the machine isn't generally a good idea.

HOW IT WORKS

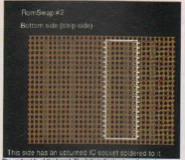
All memory chips have a controlling signal called the Chip Select (CS) line. Whenever this signal is made low (i.e. grounded), the chip springs into life and returns the data it is asked for. If the CS line is left high, the chip is in a special 'turned off state' which ensures it is totally invisible to the rest of the system.

Since the Amiga normally only has one ROM, the CS line to it is low all the time. However, to connect two ROMs we will need to find a way of choosing between them. If all their pins – with the exception of the CS line – are common, selection is nothing more complicated than making sure when one ROM's CS is low, the other is high – and vice versa.

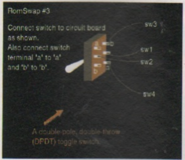
Most of the hard work in our design is carried out by the DPDT switch, which is why it is essential that you wire it correctly.



Make the connections as shown and then check them! It's a tedious task but well worth it in the long run.



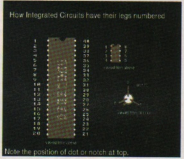
The underside of the board. The "x"s indicate where the tracks should be cut.


RomSwap #3
Connect switch to circuit board as shown.
Also connect switch terminal 'a' to 'a' and 'b' to 'b'.
sw3
sw1
sw2
sw4
A double-pole, double-throw (DPDT) toggle switch.

Left: As with everything, it's quite important to get the wiring to the switch correct. Remember the cross couplings!

Doing nasty things to DIL sockets...

Desperate times – how to hack apart a DIL socket to complete the connection between the board and the Amiga.


How Integrated Circuits have their legs numbered
1
2
3
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28
27
26
25
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23
22
21
1
2
3
4
8
7
6
5
Note the position of dot or notch at top.

If you plug a chip in the wrong way around it will either do nothing or do something very unpleasant – make sure you get it right.

OPENING UP YOUR AMIGA

Some projects will require you to strip your Amiga down to the motherboard. If you have an Amiga 1500, 2000 or 3000 this is a very simple matter and consists of removing four or five screws and opening the case. On the A500 and A500Plus, much more fun is to be had.

1. Disconnect everything, and I mean everything. Ensure the disk drive is empty.
2. Place the Amiga face down on a towel, on a large well-lit table.
3. Notice the position of the fixing screws around the perimeter of the plastic casing. There is another screw under the silver sticker at the front.
4. Say a fond farewell to your warranty. It's about to go.
5. Depending on the type of fixing screw used, you will either need a screwdriver or a small Allen key. A pair of long-nosed pliers will usually do instead of the Allen key.
6. When all screws have been removed, carefully turn the Amiga over and lift the casing. With the keyboard closest to you, lift from the left-hand side first.
7. Look inside at lots of tin sheeting acting as radio shielding.
8. Lift the keyboard free by disconnecting the keyboard cable. Also, don't forget to make a note of the cable's orientation.
9. Unfold the little flaps holding the shielding down, and lift the sheet off. Watch for sharp edges. You'll also need to remove some more screws. At this point, a longish strip of tin will magically appear. Don't worry about it – it surrounded the edge connect and can usually be done without. Put it this way – I have two in my desk drawer.
10. With the sheeting off, look at all those lovely little chips! Before you remove any, make a written note as to their orientation. Remember that a notch or dot marks pin number 1.

DIY

PROJECT 3: AUDIO AMPLIFIER

Suitable: A500,
600,2000,3000,CDTV
Difficulty: Hard

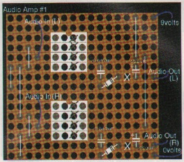
INGREDIENTS

Veroboard (15 strips by 17 holes)
2 LM386 audio amp ICs
2x8-pin DIL IC sockets
2x10Ohm resistors
1x10Kohm logorithmic potentiometer
2 Polyester 0.047uF (micro farad) capacitors
2 PC-mounting 220uF (micro farad) electrolitic capacitors
2x8Ohm loudspeakers (e.g. cheap pod-mounted car stereo speakers)
1 Simple toggle On/Off switch
2 Phono plugs and audio cable
Connecting wire 9V Battery & clip (or transformer)
Box Knob
Four self-adhesive non-slip rubber feet.

INSTRUCTIONS

Cut the veroboard to size with a hacksaw or sharp knife. Make holes in the copper strips where indicated in the diagram. Make sure that no shards of copper remain, or a short circuit will occur.

Solder the IC sockets in place, and using their position as a guide, solder in the rest of the components and connecting wires. Take long leads from the circuit to bring to the power supply (battery or transformer – a battery is best to avoid any mains hum), audio inputs, and audio outputs.



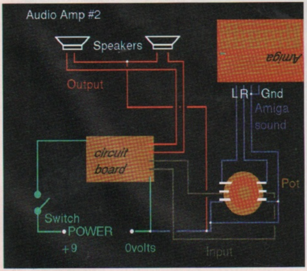
Vero layout for the Audio Amp. Again "X" indicates a track to be cut. Remember to solder in the sockets first

Both audio inputs come from the Amiga and are connected across the potentiometer using screened audio cable. Remember to put the phono plug covers on the wires before soldering them! The inputs to the amplifier circuit are taken from the central pins of the potentiometer (see diagram). No other connection to the Amiga is required.

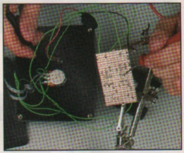
The switch is connected in-line with the power supply. You might like to add a small LED (perhaps by using a DPDT switch) to remind you that the power is on. Even if the amplifier is not connnected to the Amiga or speakers, if the battery is connected power will be used. The loudspeakers can be connected directly via their cables to the circuit board, but it may be better to use some 3.5mm plugs and sockets. This will also provide a little more portability. Mount everything in the box, after drilling holes for the volume control, switch and connection leads. Stick rubber feet on the bottom of the box for a professional finish.

HOW IT WORKS

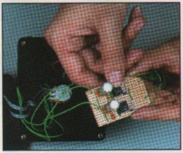
The two chips are practically complete audio amplifiers. We just need to add a power supply, a volume control, an input signal and a pair of speakers. The rest is handled by the silicon chips!



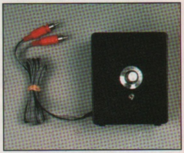
The connections aren't complicated, but there are rather a lot of them. If you are joining wires together it is easier to solder them at a natural junction, like where they are soldered to the pot for example.



With so many off-board connections you're bound to get something wrong so a Multimeter is *de rigeur*.



Always put the ICs in their sockets last to avoid damaging them. It is a good idea to 'ground' yourself before touching them.



What style. Be the envy of your mates with the traditional matt black finish. If only we could have got a dial that went up to 11...

PROJECT 4: LIGHT SENSOR

Suitable: A500,
600,2000,3000,CDTV
Difficulty: Tricky

APPLICATIONS

* Burglar alarm – trips alarm when beam is broken.
* Get your Amiga to wake you up when it gets light.
* Use your Amiga to time moving objects.

INGREDIENTS

Veroboard (at least 11 strips by 18 holes)
Light-dependant Resistor (LDR)
BC177 Transistor Miniature DIL relay (single pole, 5 volts) Maplin Order number:FX88V
14-Pin DIL IC socket for the above
10K preset resistor Connecting wire
9-pin D-type joystick socket
Power supply

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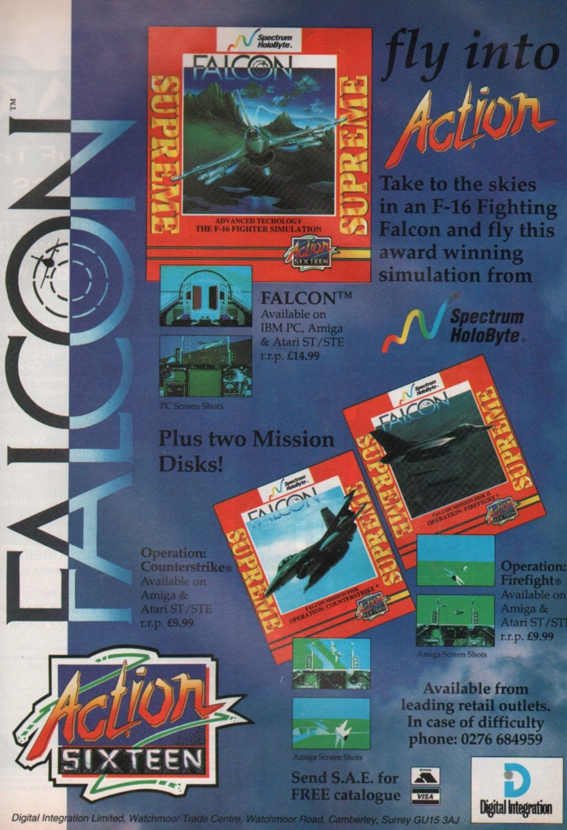
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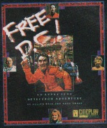

party animal?"

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SPECIAL MONEY BACK OFFER

DIY

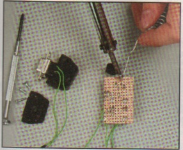
INSTRUCTIONS

First cut the veroboard to size. This is best done with a hacksaw, although if you repeatedly score the board with a very sharp knife and a steel rule you will eventually (a) cut yourself, and (b) be able to snap the board to size.

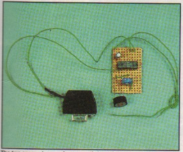
You won't need to make any holes on the track side for this project, so you can start soldering straight away. The best component to start with is the socket for the miniature relay. Once this is in place, the position of the other components can be more readily seen. When soldering the transistor, keep the heat to a minimum. Ask someone to hold the transistor's leg in a pair of pliers to transfer some of the heat away.

The LDR may be put on the end of a long pair of trailing wires if you prefer. A small cylinder made from black insulation tape will help to blinker the LDR so that only a direct beam makes a difference to its resistance.

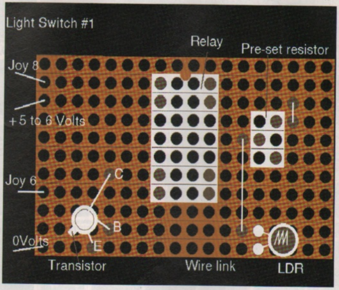
Connection to the computer is via the spare joystick port. It might be possible to take power from the port, but I recommend that you use a separate supply, such as a battery eliminator transformer, set to provide 5 to 6 volts. When connected, you will need to calibrate the circuit for the amount of light preset. The small resistor should be adjusted with a screwdriver until the relay just clicks when light falls on it.



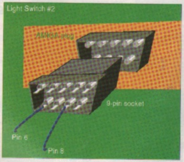
A steady hand on the iron is necessary for this project, as there is not a lot of space to work in.



The two spare wires are for connecting to a battery, although you could attach a socket and draw power from the Amiga.



Remember to cut the tracks under the relay and be careful with the LDR – they're fragile.



Joystick sockets are tricky to solder – a sharp eye, a steady hand and watch out for solder dribbling on the other pins.

Using the Light Switch from your favourite programming language is not difficult – you just need to be able to read the joystick port. All BASICs provide functions for this, as does AMOS and even ARexx. Our light switch is connected to the 'FIRE' button, but you could connect a different switch to each of Up, Down, Left and Right if you want. The world's first light-sensitive joystick?

HOW IT WORKS

The rinky-dinky little IC lookalike relay replaces the microswitch used in a joystick. It is switched on and off by current flowing through the transistor. This transistor is itself acting as a switch, and will only turn on when the current into its base terminal reaches a certain level. This level depends on the LDR, whose resistance changes depending on the amount of light available. The preset resistor (really a miniature variable resistor without a knob!) is used to balance the ciruit and control exactly how the LDR must change before the transistors becomes active.

THAT'S ALL, FOLKS

Well, that just about wraps it up for doing it yourself then. We will be continuing to publish projects in the Blues pages, with upcoming specials like a genlock, and even an accelerator card. if you have any projects of your own, send them in.

One last thing, remember that any alterations you make to your machine are your responsibility, so take care with that solder and have fun customising your Amiga.

SOLDERING

Soldering isn't difficult – soldering neatly and quickly just takes a little practice. The trick is to ensure that the parts you are soldering are well connected before you start. For a switch, wrap the wire around the contact. For a component on veroboard, bend the wire after it has come through the hole.

* Be as quick as you can. Heat can damage components, so apply the iron for as short a time as possible.

* Use as little solder as possible. The more solder you use, the more change of it spreading all over your veroboard and short-circuiting.

Tip: Use extra-fine solder.

* Use IC sockets. They cost pennies and can save an absolute fortune in the long-run.

* Use a heatsink when soldering critical components (transistors, diodes, etc). Use long-nosed pliers to grip the wire being soldered to absorb excess heat from the iron.

* Don't settle for a joint that isn't bright and shiny. It could be a 'dry joint' which will not conduct electricity very well and could cause all sorts of problems.

* Clean the bit after every joint, applying a little solder (wetting the bit) just before the next.

* Tin wire before soldering them, by allowing a small amount of solder to flow over the twisted wires.

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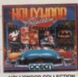
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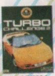
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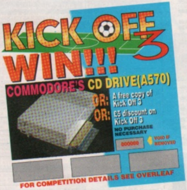
Anco score heavily in the generosity stakes this month, by giving us four A570s CD-Rom drives for our scratchcard competition. And if that wasn't enough to whet your appetite, 200 runners up will each get a free copy of *Kick Off 3*, while barrow-loads of readers could soon be mailed a specially discounted copy of the new game. So, reach for your pennies, grab your scratchcards and get scratching!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- Scratch away each of the panels to reveal the messages underneath.
- The card may reveal an 0839. If this is the case, then ring the number. You will have either won one of 200 copies of Anco's*Kick Off* 3 or a discount on their latest footballing epic. Once you know what you have won you must follow the relevant instructions.

If you have won an A570, you must fill in the back of the card and send it to the Editor, Dan Slingsby BY RECORDED DELIVERY to CU Amiga, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. We will get in touch and organise the delivery of your prize.

If you have won a free copy of *Kick Off 3*, send your card with your name and address filled out on it to TRACEY WOOD, ANCO, 4 WESTGATE HOUSE, SPITAL STREET, DARTFORD, KENT DA1 2EL. Anco will then verify your claim and your game will arrive within 28 days of the closing date.

Normally, *Kick Off 3* would cost you £24.99 but it's available to you for £5 less, so if the message reveals that you have won a discount on *Kick Off 3*, send a cheque or postal order for £19.99 made payable to Anco, along with your filled-in scratchcard, to TRACEY WOOD, ANCO, 4 WESTGATE HOUSE, SPITAL STREET, DARTFORD, KENT DA1 2EL. Anco will then verify your claim and your game will arrive on the day of its release. Other than that, stand by your joysticks and get ready for a footballing treat!

IMPORTANT: If you are a discount winner please remember to enclose your cheque to Anco.

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6. The closing date for the competition is 15th November 1992. Any entry received after this date will be ineligible for entry.
7. Employees of EMAP Images, Anco or any other participating company are not eligible to enter.

0839 numbers cost 36p per minute off-peak and 48p per minute during peak hours. Maximum length of message two minutes.

OVERSEAS READERS Our deadline for this competition has been especially extended to take overseas readers into account. Next month, we'll be printing a full list of phone numbers and what they mean to you.

THE HISTORY *of* COMPUTERS

PART 2

If last month's opening instalment of the history of computing seemed rather remote, you'll be pleased to hear that from 1984, things will become much more familiar. Take it away, Christina Erskine...

TIME FOR A CHANGE

In 1984, the games computing industry underwent huge upheaval. Many software and hardware companies went to the wall, and most of those which remained have survived to the present day in one form or another. Both Amstrad and the new-look Atari under Jack Tramiel made their first appearances. The licensing deal became suddenly popular, too, and has yet to go out of fashion. In addition, American games became affordable for the first time, thanks to newcomers, US Gold, who helped raise the standard of Commodore 64 software no end, and broadened games players horizons.

Micros such as the C64 and Amstrad's CPCs were intended primarily as games machines (despite the utilities and cut-down business software which appeared on each), rather than the tenaciously 'boffinish' image of Sinclair machines. Finally, 1984 saw the decline of home computers as the preserve of the amateur programmer and electronics enthusiast, and reinforced the micro as part of the entertainment furniture, along with the video recorder.

1984

In 1984, Sinclair launched their first revamp of the trusty Spectrum by adding a 'proper' keyboard. However, the struggling company were soon to be doomed, and newcomers Amstrad would emerge to buy them out and restyle the Speccy by adding a tape deck and disk drive to the existing unit.

In January, the national press and the TV cameras packed into the formal launch of the Sinclair QL, the machine which would lead to the eventual decline of Sinclair Research. The real problem with the QL was that Sinclair saw it as 'the first business machine for under £400' – and that Sinclair Research spent most of 1984 desperately trying to finish building the machine. Additionally, the Sinclair-buying public wanted it to be a games machine, and the business community found it impossible to take the non-standard, Microdrive-driven machine seriously. The Spectrum, however, was still selling strongly, and Sinclair injected new life into it by upgrading the machine, with a new-case and QL-style keyboard, to the Spectrum + in October. The company also announced that it was working on a portable computer – code-named Pandora – a machine which eventually came out as the distantly-related Z88.

The most significant computer launch of the year was, without a doubt, Amstrad's entry into the market. Amstrad Consumer Electronics, known for their cheap TVs and music centres, unveiled the CPC464 in April 1984. The contrast between the CPC launch and that of the QL, three months earlier, was marked. Large numbers of complete CPC464s were on display, and – unusually for 1984 – they appeared in the shops exactly when Amstrad said they would be. Twenty-odd software titles were ready under Amstrad's Amsoft label, with 30 or so more in development. Its parts were nearly all standard components, and as the tape recorder and monitor were included in the price, the machine was hailed as tremendous value for money (£229 for a green-screen unit, and £349 for a colour model).

MAC ATTACK

Also launched in January was Apple's Macintosh computer – billed as the first truly user-friendly computer. If you think Macs are expensive now, consider that the original 128K Mac cost £2,500 in the UK, and that this was still considerably cheaper than the Apple Lisa (which later became the Macintosh XL). Lisa was the first machine to use the now very familiar WIMP interface, devised by Apple from original graphic user interfaces developed by Xerox's research centre in Palo Alto at the turn of the decade.

However desirable the Macintosh is, though, it has never become a prime home computer in the UK – mainly due to the price. But its user interface, the mouse and icons, the ease of operation, and the inclusion of the larger and more practical 3.5" disk drive greatly influenced Atari and Commodore when planning the ST (dubbed the 'Jackintosh' at its launch) and the Amiga.

This year also saw the first MSX machines appear. At regular points during the year, new manufacturer's names were added to a list which would supposedly comprise the Japanese computer 'invasion' – 12 or so machines which all followed a common standard, based on the Z80 processor. Despite their success in their home market, MSX struggled in the UK. The concept of the MSX 'standard' was not well understood, they lacked software, they were sold through Hi-Fi outlets where browsers weren't particularly interested in computers, and they were priced ridiculously high – the 64K Sony, Sanyo and Mitsubishi models, for example, were £300. By Christmas, the prices were beginning to fall to nearer £200, and the reductions continued into the next year. The manufacturers unsurprisingly declined to launch MSX 2 and MSX2+ to an ungrateful British public.

Newcomers, U.S. Gold started off with a string of successful U.S.-originated hits, including *Beach Head*, *Dambusters*, and *Raid Over Moscow* — although the latter's name was changed to *Raid* to avoid upsetting our Russian comrades.

OVER TO COMMODORE

Ever since the C64 took off, Commodore had struggled to identify a worthy successor. Machines tentatively christened the 114, 264, 364, Ultimax, etc, fell by the wayside, until the C16 and Plus/4 finally arrived in April. The C16 had moderate success as a starter computer, but the Plus/4 was nowhere near as attractive as the 64 as a games machine, and its in-built business software (3 Plus 1) was inadequate for serious use.

FAST, the Federation Against Software Theft, was set up in July. Its initial aim was to lobby parliament to have the Copyright Act (1956) amended to include computer software as a specifically-protected item, a goal which it achieved in 1985. Continuing support from the software houses, and the dedication of the current chairman, Bob Hay, has led to its expansion to encompass active investigation of software piracy.

Flamboyant high fliers, Imagine, ran into difficulties in March when publisher Marshall Cavendish rejected games commissioned to support its Input magazine. In June, Imagine flogged its entire back catalogue to new company Beau Jolly – and it became apparent that they weren't wallowing in cash as much as people had been led

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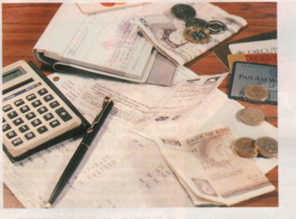

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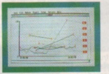

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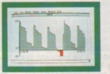
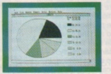
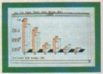


BALANCE PLOT GRAPH



BUDGET PIE CHART



BUDGET COMPARISION BAR GRAPH

PERSONAL FINANCE PROGRAM BY PETER VEALE
AMIGA CONVERSION BY DAN LENNARD

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Multiple Views
Up to 5 views of any one window can be displayed at the same time. this allows different parts of the account to be visible through independent scrolling, or copies of graphs to be displayed covering different time periods. a total of 67 windows are defined.

Account Files
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Desktop
PFM Plus uses workbench desktop from which accounts may be selected. The desktop also includes an analog clock and a four function calculator. the calculator can be used even if it is not in the top window. Desktop icons can be re-arranged as required

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THE HISTORY of COMPUTERS

to believe. Imagine went into receivership in July, in a flurry of winding-up orders, off-the-shelf companies, resignations, unfinished Megagames, and fast cars. It owed money to Marshall Cavendish, Liverpool City Council, and its wine merchant among others. Imagine wasn't the only company to go spectacularly bust in1984, but it was the biggest of the software houses to do so. It caused shock waves throughout the industry and beyond because Imagine had been excellent at publicising itself as a non-stop success story far and wide. It had been symbolic of the good life of 1983 and its fall was equally representative of the new realism of 1984.

JACK'S BACK

When Jack Tramiel, high-profile managing director of Commodore International, left the firm on January 13th (a Friday), it surprised even his own employees. None of them would have predicted that, before the year was out, he would be heading Atari, the company Commodore had virtually buried. Tramiel had built Commodore up from a typewriter repair company in the 1950s to an international Corporation which had survived the 'Calculator Wars' of the 1970s, and had gone on to lead the world in low-cost colour computing with the Vic 20 and the C64. It is generally accepted that Tramiel left in a dispute with chairman Irving Gould over bringing his three sons into managerial positions within the company. Tramiel only laid low for a few months before his name was linked with Warner Communications and its ailing Atari division. In July, an extraordinary deal was signed in which Warners, in effect, lent Tramiel the money to buy Atari. Relations with Commodore at this point were hardly amicable. As senior Commodore executives left to join Tramiel at the new Atari, law suits were also exchanged.

The legal action concerned an unfinished micro called the Lorraine, which was being developed by a company called Amiga and headed by Jay Miner, designer of the Atari 800's graphic chips. Commodore was trying to buy the company outright; Atari claimed Amiga had not repaid its advance to Atari for a chip design contract. The legal arguments continued for well over a year, but didn't prevent Commodore from acquiring Amiga and continuing to fund development of the Lorraine micro, which Commodore consequently renamed the Amiga.

Games Of The Year

Elite **– First of the space combat and trading games and arguably still the best. British Telecom bought the conversion rightsto producre it across all formats.**

Jet Set Willy **(Spectrum) – Long-awaited follow-up to *Manic Miner*, *JSW* was really simple platforms and ladders, but it scored highly for its playability and programmer Matthew Smith's sense of humour - it was also the first ever arcade/adventure.**

Lords Of Midnight **– Strategy wargame with a vast number of locations. Startlingly original at the time.**

Knight Lore **– Probably Ultimate's finest hour. With *Knight Lore*, they revolutionised Spectrum programming by creating highly-detailed solid graphics, but each screen was a single colour against a black backdrop – thus avoiding the Spectrum's notorious attribute clash.**

1985

1985 reached new heights of excellence as far as PR stunts were concerned. Most notable of all were the press photos relating to Domark's Friday The 13th licence, though.

In 1985, memory chips were cheap and manufacturers took advantage of this by upgrading their old machines. The Commodore 64 became the Commodore 128, the Amstrad CPC464 became the CPC664 – four months later 664 buyers all had collective apoplexy when the CPC6128 appeared in the shops.

Atari proudly unveiled its new ST technology at the CES in January. The original ST series comprised two models: the 128K 130ST and the 512K 520ST – oddly enough, the machine's disk drive was separately housed, rather than built into the keyboard. The STs were initially pitched as Macintosh perform-alikes at a third of the price – the 130ST was to be priced at $399 and the 520ST at $599.

Commodore's Amiga was also launched this year, at a high-pizazz function in New York, and in the UK at the September PCW show. The Amiga's exact configurations remained fairly fluid until it eventually became available in 1986. Commodore, however, spent much of 1985 forcing attention on to the C128 – with only partial success.

While Atari and Commodore were redefining the leisure computer, Amstrad took an entirely different route with the PCW8256, creating a completely new market for cheap word processing. Finally, it was farewell to the Oric, which finally gave up the fight and the parent company went into reveivership.

GOODBYE C5

On a snowy day in January, Sir Clive Sinclair and SinclairVehicles launched the C5 electric vehicle. By April, the production line at Hoover in Merthyr Tydfil was cut back from1,000 C5s a week to 100. In August, production ceased altogether and in October the receiver was called in to Sinclair Vehicles. Around 4,500 C5s were sold in total; Sinclair's target was 200,000 in the first year.

1985 was the year in which industry stalwarts Acorn had to be rescued by Olivetti – twice. The Cambridge-based company's shares were suspended, first in February, and were then reinstated the same month when Olivetti took a 49.3% stake in the firm. Then in June the shares were suspended again and in August came Olivetti to the rescue again, raising its share to 78.9%.

Also in financial trouble were Sinclair Research. Production of the QL and Spectrum were halted, and development work on future machines seemed to have ground to a halt. The company admitted in June that it was looking for finance and famous Oceanic swimmer, Robert Maxwell, was to announce that he would help his old friend Sir Clive out of his predicament. This was before Maxwell had seen the Sinclair accounts, though. Barely six weeks later the deal was off. Sir Clive responded by saying that the latest Dixon's order for £10 million worth of Spectrums, QLs and TVs meant a rescue was no longer necessary and that Sinclair Research would soldier on.

COMPANIES OF THE TIME

ACTIVISION Founded: 1979 (UK: 1983)

Initially a video game manufacturer, Activision turned its attention to Atari, Commodore, and Apple II computers in 1984. The UK division was established in September 1983 and, like its US parent company, began selling computer titles in 1984. The company has a strong reputation in the field of licencing games, but has also produced some of software's quirkier gamessuch as *Alter Ego* and *Little Computer People*. In February 1986, Activision bought out adventure specialist Infocom, which continued as a separate label within the group. Activision are now owned by the French team, The Disc Company.

First computer titles: Pitfall and Zenji (Atari 400/800)
Best ever seller: Ghostbusters (all formats), released for Christmas 1984. Ghostbusters is the world's biggest-selling computer game, with over 2 million units sold altogether todate.

OCEAN Founded: June 1983

Collaboration with US Gold in 1984 pushed Ocean Software into software's first division. The company was founded by David Ward (who had previously headed up mail order outfit called Spectrum Games – whose name had singularly failed to delight Sinclair Research) and wine bar proprietor, Jon Woods. Together with Superior Software, it became the first publisher to acquire a legitimate coin-op conversion licence – *Hunchback* – from Century Electronics. A few years later, they bought the rights to use the Imagine name as a label. In recent years, Ocean has become one of the most consistently successful publishers, with a string of sought-after licences converted into computer games, including The Untouchables, The Addams Family, and Terminator II.

First title: Armageddon (Spectrum)
Best ever seller: Daley Thompson's Decathlon

US GOLD Founded: January 1984

Geoff and Anne Brown set up Centresoft in 1982 to distribute computer games. Among the titles they handled were Atari400/800 and Commodore 64 imports from the US, which were generally superior to home-grown titles, but proved difficult to sell at £30-£40. The Browns tried to persuade the US companies to let them duplicate, package and sell their titles in the UK, under the separate brand name US Gold. They were fairly unsuccessful until *Beach Head*, from a then-tiny company called Access, sold in vast quantities, and convinced the American publishers that they were missing out.

As the US Gold catalogue grew, the Browns asked Ocean to deal with conversions to British machines, and Ocean chiefs David Ward and Jon Woods became directors. *Beach Head* was the first title to be converted on to the Spectrum, and remains one of US Gold's best sellers to this day. US Gold introduced British gamers to Epyx's sports simulations and *Leaderboard*, and to Microprose's flight simulations, SSI's role-playing games, and, more recently, to coin-op conversions from Capcom and Sega.

First title: Beach Head, Commodore 64
Best ever seller: OutRun (all formats), with over 500,000 sales.

MASTERTRONIC Founded: 1984

Mastertronic invented budget software. Before Mastertronic,Spectrum software cost anything from £5 to £10, Commodore 64 titles around £8 to £10, Atari XL games £10 upwards. Furthermore, Mastertronic distributed its cheap games into unconventional places: motorway service stations, newsagents,garage forecourts, and supermarkets. In July 1984, Mastertronic joined forces with Galactic Software – the Darling brothers – and the first of the long running 'Simulator' series came out. The Darlings broke away to form CodeMasters in 1986. In 1987, Mastertronic bought Australian publisher Melbourne House, and in 1988 became part of the Virgin group.

First title: 12 debut titles, including Vegas Jackpot, SpaceWalk and Bionic Granny, for Vic 20, C16 and C64.
Best ever seller: Formula One Simulator (all 8-bits)

SCREEN SCENE

Welcome to Screen Scene. Within these pages, you will find THE most concise information on all the latest and best games.

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Ninety-three percent and a game's worth a superstar. We hardly throw these around—but if a game displays totally superior qualities, it just might be in with a chance.

The CU Screen Star is for games scoring 85%-92%. If a Screen Star is awarded then, you can be sure that the product will have reached a high standard in gameplay, sound and graphics and that will have long lasting appeal.

FIRST

The Amiga games scene has nevber looked so hot. Here's what you can expect to be playing real soon now...

FLASHBACK

DELPHINE/US GOLD

When US Gold released *Another World* late last year, critics were unreserved in their praise. At last, here was a game that effectively combined superb graphics and animation with a control system that involved more than pressing a fire button at relevant points during the game (a la *Space Quest*, *Dragon's Lair*, etc). Unfortunately, the game was also very short, with experienced players able to complete it in little over two hours from a standing start.

Learning from past mistakes, French development house, Delphine, are now back with another stab at claiming the interactive crown. Ten times larger than *Another World*, *Flashback* features a typical 50s B-Movie plot involving aliens from outer space taking on the outward form of human beings in their attempt to infiltrate the higher echelons of a society they wish to destroy. Square-jawed hero, Conrad B. Heart, a research scientist who stumbles across the aliens' plans, is kidnapped by the extra-terrestrials and imprisoned in a high security hospital. Losing his memory, he escapes his confines, only to find he has been transported to the aliens' home planet. Alone, hungry and dazed, Conrad must search for an escape route while also piecing together his lost identity...

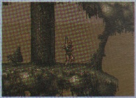
Well, so much for an original plot, but from what we've seen of the gameplay, *Flashback* certainly looks a winner. Owing a lot to Broderbund's *Prince Of Persia*, Conrad can walk, run, jump, climb, roll, duck, skid to a halt, inch his way cautiously forward, pick up objects, hang from ledges and a lot more besides. The character animation was achieved using a technique called Rotoscoping were real-life video footage of actors is used to obtain realistic and fluid movement in their animated computer counterparts. This technique, coupled with cinematic techniques such as animated close-ups, zooms and numerous flashback sequences (hence the title), help give the game a movie-style presentation.

There's a lot more to do in *Flashback* than simply dodging laser fire, beating up guards and blasting alien hordes. Vital clues must be obtained by questioning various characters and there are five large levels to explore before you can save the day and win the game. Available in the autumn, we'll have a full review as soon as possible.

IMPRESSIONS

LIONHEART

THALION



Coming soon from Thalion is a graphically-stunning mixture of *Strider* and *Wolfchild*. Entitled *Lionheart*, the game is a massive platform affair, with the player controlling a half man/half beast creature as he traverses the eight-way-scrolling levels in search of the huge guardian who awaits at the end. As he leaps from branch to branch or wall to wall (depending on the graphical theme of each stage), numerous nasties must be avoided or killed using whatever comes to hand. Luckily, though, the sprite under the player's control is an incredibly athletic chap, and can be made to run, fight and slash out with his sword, whilst simultaneously jumping from ledge to ledge. A release date has yet to be set, but there's no doubting that *Lionheart* is looking very interesting indeed.

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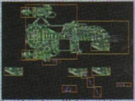
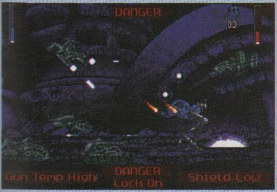
WALKER

PSYGNOSIS



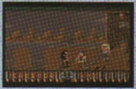
Since its conception two years ago, *Walker* has grown in leaps and bounds. Initially in the hands of DMA Design's David Jones, the game is now being handled by Ian Dunlop whilst David attempts to follow-up the exploits of those little *Lemmings* critters. The story tells of how the player gets sucked into an arcade machine and must literally play or die. Once in, the game is split into two sections, with the first involving blasting whatever comes your way from the safety of your Walker, and the second part taking you past a guardian and into a platform-based area. Expected for a Christmas release, *Walker* will be reviewed very soon.

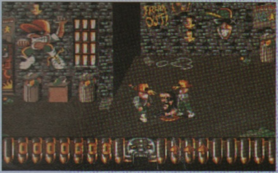


MOTORHEAD

VIRGIN

Yes, it's true, warts'n'all rocker, Lemmy, is set to smash his way on to your Amiga – courtesy of those wacky guys and gals at Virgin. Virgin signed the licence to produce a game based on Motorhead almost two years ago, but now the game has finally been unveiled. Cast as Lemmy, the player must guide the long-haired rascal as he fights his way through a series of *Double Dragon*-style levels in search of his kidnapped band members. These fine musicians have been stashed away in a series of music-related levels, so Lemmy must punch and kick his way through all manner of evil Ravers, country and western legends, and rap stars before he reaches the chained members – in addition, by strumming his trusty guitar at the oncoming baddies, Lemmy can also reduce them to a pile of goo! What's more, the sub-games are also tuned in to the Lemmy mythos. For instance, in one, you must guzzle as much lager as possible before a timer ticks away, or pop out for a game of 'Grab A Groupie' (you wait until the Daily Mirror gets wind of this!). Expect a review shortly.





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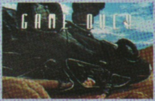
OUTLANDER

MINDSCAPE

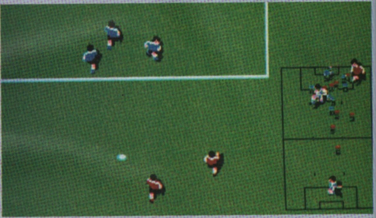
Mindscape have owned the rights to produce a Mad Max game for several years now, but it seems the nearest they are going to come to one is the forthcoming *Outlander*. Assuming the role of a Government-paid mercenary, the player must venture into the 'Outland' in search of dangerous crooks and, in particular, a highly-important weapons specialist who has been kidnapped. Armed with a super-fast car and a series of weapons, you must enter the barren deserts and take out anyone who attacks you whilst scouring the area for the weapons ace. OK, so this sounds like familiar *Roadblasters* territory so far, but there are a number of gameplay enhancements, which include the ability to shoot people through any one of the car's windows – leading to some spectacular crash sequences where the hapless enemy is sent skidding across your bonnet only for you to run him over! Following this, the game then adopts a *Rolling Thunder*-style scrolling section, where the hero must fight his way through a mob of unruly baddies in search of clues. *Outlander* is slated for a November release.



KICK OFF 3

WORLD EXCLUSIVE

The best football game on the Amiga has been entirely recoded. Steve Keen takes a look at *Kick Off 3* and comes away with an exclusive look at the game's new features.



Here we find the players in enlarged mode. The scanner has been pushed over to the right hand side and although it's small it still retains the shirt numbers on the pitch. The scanner can be reduced even further or taken away completely.

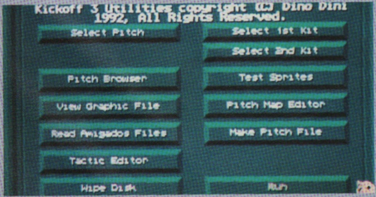
HISTORY IN THE MAKING Just over four years ago a young programmer began an assault on the computer footballing world which has remained unrivalled for years. With his first ever commercial game, *Kick Off*, and its sequel, he managed to single-handedly revolutionise the way we all perceived Football games on the home computer. It's only now that the ball has been swept from under his feet, in the guise of *Sensible Soccer* and *Striker*, that he's prepared to shed some light on the most eagerly-anticipated sequel since *Monkey Island 2*. With *Kick Off 3* only two months away from completion, that programmer, Dino Dini, will be hoping to confirm that he is the definitive soccer programmer and grab back the footballing crown for good.

Let's get it out in the open. *Kick Off 3* is not an ordinary sequel. From the screen shots you could be forgiven for thinking that the graphics are exactly the same. In the flesh, however, it's an entirely new ball game. For starters, the sprites that tear up and down the pitch look twice the size of the original, and now measure up to 24x16 pixels instead of the 16x16 we are all used to. They are also a lot taller, giving the impression that they're at a less steep angle to the pitch. They have been totally redrawn and possess a previously unseen amount of detail that's so clear and precise you could almost swear that they have expressions on their tiny faces. However, this is only one aspect of the game that's been revamped, as you'll discover later, and the innovative changes have been packed in tighter than an agoraphobic baked bean in a Heinz factory. To spill the whole story let's dive straight into our World exclusive interview with the man himself. Over to you, Dino!

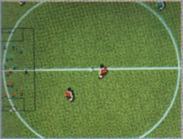
Following the enormous success of *Kick Off 2* why did you think that there was room for yet another football sim? 'Well, *Kick Off 2* had been around for over a year, and we found that during that time most people who had bought it had played the game to death and knew it inside out. The game was timed to be released in conjunction with the start of the World Cup which didn't give us much time for play testing. After 12 months it began to transpire that there was a lot of room for improvement and people were beginning to suggest things that they would have liked to have been included.'

So what's new? 'The game itself has been completely recoded,' he explains. 'I wanted to improve the way the computer teams played and they are now far more intelligent. Each team member now possesses his own set of tactics and there will also be a wide choice of team strategies to suit every style of play. These tactics are the most superior any player will have come across, using ten times the amount of data and complexity than those found in *Kick Off 2*. The manoeuvres you can now perform are extremely detailed and accurate passing becomes second nature.'

A CHANGE OF PACE 'One of the biggest changes I've implemented is the introduction of player acceleration and deceleration. When I started *Kick Off*, the brief from Anco was that they wanted an intelligent and realistic football sim, so I spent a lot of time trying to find the best way of recreating the feel of the sport. The ball is the focal point of the whole game. I knew that it had to behave in exactly the right manner for the game to be convincing and that is where I got the idea for friction. When a player runs up and kicks the ball it moves away from him faster than he is travelling. Then, due to air friction, the ball slows down allowing him



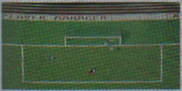
A whole range of options are available to the semi-professional computer footballer and programmer. Here Dino can edit the pitch, the sprites or even change the way players behave. It's a pity he can't affect the way some of the fans carry on, too.



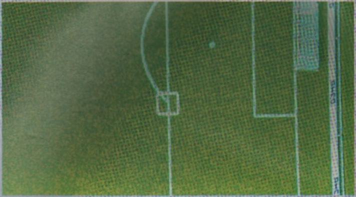
Bets are already being taken on how long the game will stay at number one once it has been released. Two months?

to catch up and that is the basic ball movement. In *Kick Off 3*, by pushing the joystick forward you can actually see the players begin their run and build up to a sprint, whilst centring the joystick slows them down. Thus, the realism in the movement of the ball has been transferred into the movement of the players, resulting in a much more realistic-looking game. Not only that, but the speed at which the players run directly affects the amount of control you have over the ball. Ultimately, dribbling is easier as you have control over the speed at which your player accelerates. The faster you run the less dribbling and turning on the ball you can do. At a slow speed the ball won't move so far away from your feet and you can actually pull it in all manner of directions, bobbing and weaving with all kinds of fancy movements.'

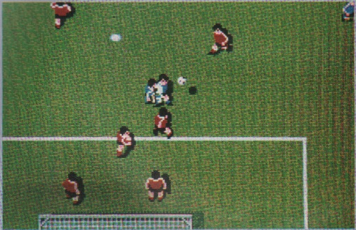
Impressive claims, but you haven't heard the half of it. Eagle-eyed readers will have noticed the discrepancies in sprite sizes from around the pages. This is not a fault with our camera zoom, but another amazing first from the would-be Footy King – *Kick Off 3* actually includes a choice of sprite sizes. This means that you can decide whether to play your game with large detailed sprites or scaled down versions allowing you to see more of the pitch. Not only that, but at any point during the game you can alternate between the two modes with a quick stab of the spacebar. Incredibly, though, the reduction in sprite size has not resulted in any loss of detail, as they are exactly the same as their bigger brothers and still pump their arms and legs as ferociously as before when hurtling around the pitch. However, even more exciting, Dino has also included the option for the player to set the computer to automatically switch between the two views at opportune moments during the game. For example, if the ball should go off for a corner you can take the kick in small mode and tell the computer to instantaneously switch to full-size when the ball floats into the area for a close up of the action. 'The screen updates at 50 frames a second,' says Dino, 'and with all the detail I've put in I've had to use some real tricks of the trade so that there's no loss of speed. Even *Kick Off 2* suffered a slight 10% or 15% reduction when things became cluttered, but the new game won't have this problem at all.'



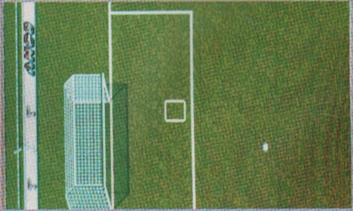
Penalties are always taken under pressure, but with the new improved shooting system you'll score a lot more often.



This is a shot of the pitch editor in action. Dino uses this to construct and fill in the different playing surfaces that we love to run around on. He has also added considerable detail to the boundaries surrounding the pitch with a running track and stand included for the first time.

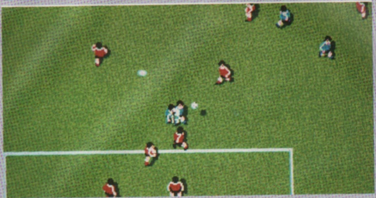


You can clearly see here how detailed the sprites are. They may be small but they easily compensate for their size by the amount of life they inject into goal mouth scrambles and the like.



Not only are these the first pictures in the world taken of Kick Off 3 but they are also pictures of the first game in the world to feature more than one style of pitch. This is how the horizontally scrolling field will look in enlarged mode.

KICK OFF 3



Shoulder to shoulder on the edge of the six yard box. The player tactics have yet to be addressed which has resulted in a fair bit of bunching by the players who tend to 'hunt' in packs at the moment!

DOUBLE TROUBLE

The single team multi-player system Dino incorporated into *Kick Off 2*, that allowed more than one human to play and control selected men on the same team during a match, didn't quite take off. The problem was that you couldn't have both the controlled players on the screen at the same time. Dino is currently looking into the possibility of having a nearest-to-the-ball routine for two independent joysticks that would switch control to one joystick so that the two players can control any sprite rather than be stuck with one all the time.

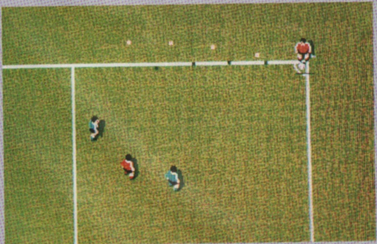
There were more than a few criticisms levelled at *Kick Off 2* and Mr Dini promises that the same will not be true of his latest creation. 'One of the hardest aspects to address in a Football game is the personality of the 'keeper and how he's going to deal with the perpetual torrent of shots. Some people scoffed at the way the goalie tended to be slightly hyperactive in *Kick Off 2*. He could jump from one goal post to another, skidding 20 feet across the pitch and still save the ball with his feet when it had appeared to have long gone past him. The trouble is that the only thing you can do with the 'keeper – apart from rolling the ball out or goal kicking – is diving and saving. This provides a bit of a problem as the actual reaction time needed to switch controls occurs faster than humanly possible. You would never be able to see the keeper and the ball on the screen at the same time early enough to be able to make the decision to control the keeper with the joystick. If he was joystick-controlled, the whole thing would be a mockery. Goals would be pouring in left and right, making it very frustrating. So, for the most part, the computer makes the decisions.

MATHEMATICAL MARVEL 'The goalie in *Kick Off 2* is controlled by algorithms and although it may surprise you, he never cheats. The algorithms are a set of complicated, calculations and formulas which look at the ball and work out where it's going to go, where it's going to cross the goal line, and how high it's travelling. It then sends all that information to the routine which prompts the keeper to dive. On top of that, he must be within a certain radius of the ball to catch it. In order to prevent an enormous amount of goals being scored, that radius is set quite large – larger than perhaps it would be in real life. This means it won't always touch his hands, but it'll be close enough to his body to be transferred to them. Thus, you'll get the effect of the impenetrable, invisible force field that seems to surround him sometimes.'

Kick Off initially took fifteen months to produce and the sequel was finished in less than half that time, with the original providing all the ground work. *Kick Off 3* has taken more than twice as long, signifying the incredible amount of new code that's been needed. 'Another feature I've adapted is the scanner. I still feel it's vital to the game even though many people could not move their eyes off the ball to use it. *Kick Off 3* will not only let you change the size of the scanner, but its position as well. You can place it almost anywhere on the screen.' That's not the only difference as the tiny dots have been discarded and replaced by little men with an option for their shirt numbers to be displayed above their heads. An altogether more pleasing and user-friendly device.

A VIEW TO A KILL(ING) Now hold onto your seats as we've saved the really big surprise until last. We all know that the *Kick Off* series are played over vertically-based pitches, but what would happen if you applied the same gameplay, style and characteristics to a horizontally-biased version? Well, now's your chance to find out because Dino has crammed an entirely new perspective, including that very same scenario into the game. The sprites are the same and include all the options of the other game including the size ratio, but they now run left to right! The immediate difference, although drawn to exactly the same scale, is that the pitch is a lot bigger (especially in terms of its width) as the scaling accommodates for the shape of the TV or monitor. This new view works particularly well with the new Free Kick and Corner routines. The arrowed box has been replaced by a dotted marker which traces out the path of the ball and controls its direction and height (a system a little similar to that of Rage's *Striker*). Aftertouch and swerve will be available after you've set your desired kick. 'You now have almost infinite control over where you can place the ball,' enthuses Dino, 'which was one of the main problems before. Now you can position it right on your man and with practice you should be able to have a great chance of scoring from any given situation.'

A FLY IN THE OINTMENT With all these new additions, it's easy to forget that the game will still have its quota of old familiar options. There will be in the region of 100 teams to play with, individual kit designs, skill levels, and editors. Single game,



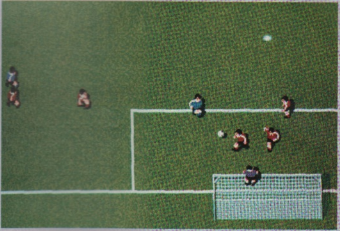
Dino freely admits the fact that *Kick Off 2* had certain flaws. The corner kicks have to be one of the major disappointments in *Kick Off 2*, but the new directional pointer employed in 3 has corrected the initial flaws.

THE ACID TEST

Of *Kick Off 2* Dino says: 'I think it was the best game of its time, but if I had more experience of people playing it and I'd had the knowledge that I have now it could have been a lot better. It's taken two years of playing the game to get the understanding of how to make it play better. Nobody except Steve Screech really play-tested *Kick Off 2* and it was almost a case of straight off the computer and into Anco's hands.

IT PAYS TO ADVERTISE

What with the commercial aspect of computer advertising rearing an ever increasing head, Anco have thought about placing some corporate ads on the hording that surround the pitch. So far the main 'player' seems to be Coca Cola, but nothing's been confirmed in writing yet.



Scoring opportunities abound in *Kick Off 3*, but you'll still need all your old skills to outwit the keeper. There's a lot more movement in the box and the goalie is less reluctent to dive on every free ball going.

practice mode, action replays, cups and leagues will also be making a welcome return along side some rather novel option menus one of which will allow the customisation of joystick controls.

However, with all this detail, menus and sub menus comes an ocean full of problems for Mr Dini. 'The hardest and most time consuming part of producing a game such as this, apart from the actual programming, is debugging it all. The programming is so involved, and the computer so dumb, you have to tell it to do everything and then instruct it how to cope with all the different circumstances that occur. In a simulation like this, you have hundreds of independent things moving at once. What tends to happen is that these hundreds of pieces interact with each other to provide millions of combinations and it only takes one unexpected result to produce a bug. The new programming techniques I'm using are designed to minimise these problems, but they're not always easy to foresee. That's what happened with the now famous bug in *Kick Off 2*, where the player occasionally takes the corner from the wrong end of the pitch. These things are literally one in a million and something like that occurring in *Kick Off 3* is almost impossible. The intelligence factor is incredibly hard to implement and you can imagine the mathematics involved are unbelievably complex. You have to give the sprites eyes and make them aware of the objects around them in order to decide what action to take. One single decision taken by a player would take up about thirty screens of data. All that text has to be scanned through, scrutinised and a reaction produced in a millisecond. It's not surprising that the occasional glitch is thrown up.'

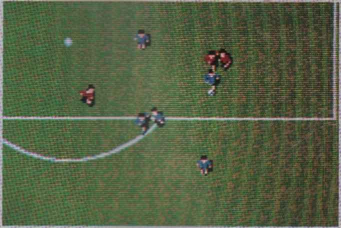
THE GOLDEN SHOT There's much more passing in the area involved in the new game as well as turning on the ball – which is again directly affected by the speed of your player. The computer players try exceedingly hard to get into good shooting positions before they take a crack at the goal and, at the moment, few opportunities are wasted. Fortunately for us, however, Dino says the final version will include realistic inaccuracies. After all, no one is likely to get a shot on target from the half way line, and Dino's aim is to make every shot as realistic as in real life. Another characteristic he's looking at introducing, as if the goal keeper routines weren't complicated enough, is how easy a shot is to save. So a fast ball travelling low to the back end of the goalie's body will have a low probability of being saved and one straight to his chest a high chance of being stopped. This results in the keeper having weaknesses that you can learn to exploit.

Kick Off 3 is set to make its debut in September and the Dini/Anco clan are backing it to be the ultimate footballing experience. 'I don't see how much more anyone could get out of the football genre,' says Dino. 'There's so many different soccer games out there that what I've tried to do is bring the best points together with some incredible new features of my own. Every aspect of *Kick Off 2* has been improved right down to the sliding tackles that now have aftertouch as with other shots. The *Kick Off* trilogy allows you to develop your skills the more familiar you become with the games, and the excitement of the original is still here in abundance. Loyal fans of the first two games will not be disappointed and new comers will be surprised at the achievements. I guarantee that there's something to delight everybody.'

We'll have a full review of the game as soon as it's passed the playtesting stage and the game itself looks likely to be in the shops by the beginning of October at the very latest. Although guaranteed huge sales on its release, Anco have resisted exploiting the massive following the game has built-up by keeping the price at a budget-beating £24.99. What is still uncertain as I write this, is whether there will be any add-on disks as was the case with Kick Off 2. Anco have now abandoned the home computer market, so this could very well be the last version of *Kick Off* we'll see on the Amiga. The good news is that it looks like a winner all the way.

LEST WE FORGET

The original *Kick Off* is a far cry from the game currently under development. It only possessed two team colours and there weren't any such luxuries as after touch, sliding tackles, extra time or replays. Competitors did have the option to play 'Sunday League' however, and had the choice of playing the full 45 minutes a side in real time!



Nothing's more satisfying than slamming a thunderous volley in to the back of the net from 20 yards out. Well, perhaps slamming one in from 30 yards might be! All this and more is possible thanks to the keeper's fallibility.

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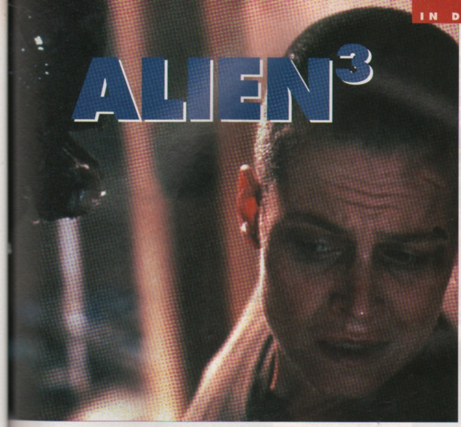

ALIEN^3

It is one of the most eagerly-awaited films of the year. And it certainly has a tough act to follow. Steve Merrett takes a look at Alien^3 - the film and Acclaim's new game...

NO ARMS IN TRYING Whereas James Cameron's Aliens and its gun-toting action scenes lent itself perfectly to a computer game, it has to be said that Alien^3 isn't the most trigger-happy of films. As with Alien, Ridley Scott's first film in the series, the Producers (on Sigourney Weaver's insistence) deliberately kept the prisoners on Fiorina unarmed to make for a tighter and more suspenseful film. Yet corridor chases and the occasional death scene don't exactly sound the sort of thing that an action-packed game is made of. So when Croydon-based Probe Software were approached to produce the Alien^3 licence for the consoles and the Amiga, a few liberties had to be taken – well, quite a few, actually. You see, in the quest for a decent Alien-related game, Probe decided that a few of the film's ideas should go out of the window, rather than for them to stay totally faithful and produce a game which nobody would want to play.

As far as sprite recognition goes, there are no problems here. The eight-way-scrolling world of Fiorina's prison complex is populated by the movie's bald-headed convicts – all of whom rather strangely seem to resemble Brian Glover (the film's Prison Warder) rather than the likes of Charles Dance and Paul McGann. However, Ripley herself is instantly recognisable as, armed with a pulse rifle and a series of explosive weaponry, she legs it through the game's many corridors in search of the Alien menace. Explosive weapons? Pulse rifles? Shome Mishtake, Shurely? Not Really. 'When we started work on the Megadrive version nine months ago,' states coder Tim Round, 'we had the script, storyboards and loads of photos for reference. It was obvious from the 'no weapons' clause, though, that the actions scenes just weren't conducive to a decent arcade game – after all, what's the player going to do when they encounter the lone Alien and can't shoot it – run away?'

SCRIPT TROUBLE With stories regarding the film's problematic shooting schedule flying about, just how complete was the script Tim was working on? 'Actually, it was virtually complete,' he affirmed. 'There were one or two minor alterations – such as the creature the Alien emerges from, for instance – but all the plot elements were there. Considering that I only had pictures to go on and hadn't seen the film at the time of coding, I was really surprised at how close the game screens are to the real thing.' Right at the start, it was decided to avoid the script. It threw up a lot of problems in respect of making a game. 'The main difference between the two,' explains Tim, 'is that in the

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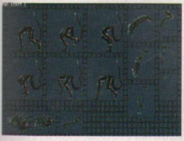
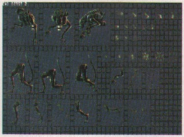
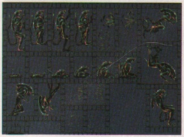


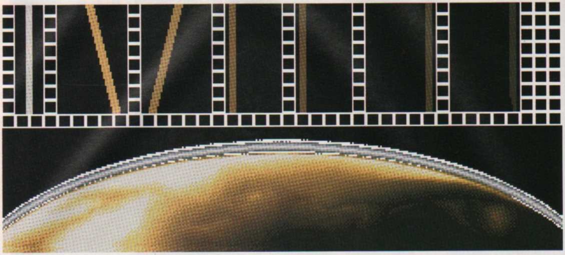
What a lovely pair of legs. But looks can be deceiving. You'll need a great deal of firepower to survive the alien onslaught. Weapons are secreted on each level to help you blast away.



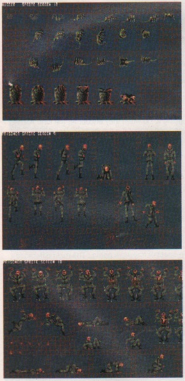
The familiar 'Alien' look is obvious in this end-of-level guardian sprite screen. Able to secrete deadly acid from their glands, each alien in the prison is a formidable foe to overcome.



The aliens aren't just dumb beasts, however, and many will hide away waiting for the most opportune moment to strike. Some can even climb walls and ladders, ready to leap out.



As with the Alien movies, the intro sequence is highly impressive. As a huge planet comes into view, the Alien³ logo appears to form slowly in the planet's atmosphere. One by one, the words of the film are spelt out, with an atmospheric soundtrack adding to the hugely impressive graphics.



Top: Alien face-huggers and pods feature heavily throughout the game. Get to close, and it's the kiss of death.
Middle: As you'll be able to see from this sprite bank, the prisoner animation is very detailed.
Bottom: Fail to rescue all the prisoners and you'll have to witness the men you left behind being slowly ripped to shreads before your very eyes.

movie Ripley spends most of her time weaponless, being pursued by the monster, while in the game she's armed to the teeth.'

Work started on *Alien³*, the game, well before Acclaim took up the project. Initially the rights were held by Mirrorsoft before their unforeseen demise. As you would expect *Alien³* was one of the first to be snatched up by the circling buzzards. 'You don't leave a money spinner like this license gathering moss,' says Probe.

So how's the license shaping up? Set on the desolate planet's surface of Fury 161 the game kicks into action outside a main entrance that begins your five level horror blast. Each level is amde up of four individual stages, including a special section where you must locate and destroy anything between a single guardian alien and a whole horde. The level is a maze of platforms and ladders and the beasts will even spit/drip acid onto your body to drain Ripley's energy.

RESTRICTIONS
In typical film mogul fashion the programmers had restrictions imposed on them when producing the Acclaim game. One of the strangest was the proviso that in no form what-so-ever were they allowed to show the Ripley character dying! Strange indeed!

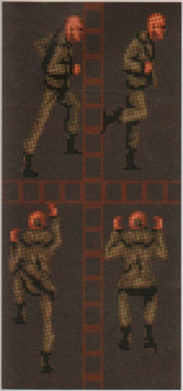
LET ME TELL YOU A STORY The standard mission is simple, rescue the stranded prisoners and kill anything else that breaths before your time's up. Before each stage starts you are told what your objectives are. It could be a 'simple' matter of finding your way out of a level before the timer expires, to rescuing as many prisoners as possible or killing sundry aliens in a given time limit. If you should miss a couple of the convicts the computer scrolls back to their location after the completion of the level and you can watch them explode before your eyes! But with so much hardware at your disposal it shouldn't happen often.

The four choice weapons are the pulse riffle, flame thrower, grenades and grenade launcher. Obviously, some are more powerful than others, but in some situations it's best to choose a weapon for its versatility rather than its carnage rating. The riffle lets you shoot at angles, whilst the flamethrower allows you to stand and duck when firing. Grenades can be dropped into ducts to bounce around before hitting their target and the launcher, the most devastating weapon, will take out huge numbers of beasts, but takes precious seconds to cock and load.

The locations of the levels are excellent with all the 16 colour Amiga palette used to great effect. Some of the environments, such as the slaughter house, contain the Aliens and are richly detailed and very atmospheric. Dead chickens scatter the levels and oxen hang from hooks riddled with gaping holes looking like they've exploded from the inside out. The usual gantries and girders, ladders and conveyor belts make up the platforms and all look well at home in the themed arenas. As often happens when British programmers produce games of block busting films, timed for movie release, they don't get to see the flick until well into their schedule. However, the team were astounded by the closeness in detail and the resemblance that the software bears to the overall look of its celluloid cousin.

ALIEN DETAIL There are two types of Alien to combat during the game. The small face-huggers and the huge, fully developed aliens. This monster has been genetically spliced with an ox and therefore runs around on all fours. The smaller crab-like versions hide in shadows, crawl across ceilings and walls and generally scuttle around just as they do in the films. One of the most entertaining sections sees Ripley coming across scores of pods that begin to hatch before your eyes. Suddenly they burst open, flinging the face-huggers through the air and onto her face. Only by waggling the joystick furiously from left to right will you break their grip. All the time the monsters are in contact with the heroine they drain her energy so the faster you waggle the longer she'll live.

Life preservation (yours and the prisoners) is the name of the game and there's plenty of useful kit to help you in your mission. An on-screen monitor warns of approaching life-forms including the various aliens and prisoners. This feature is invaluable when exploring some of the bigger levels as you only have a few minutes to complete a search-and-find mission. Nearly all of the levels contain the claustrophobic ducts seen in the original film. A lot of the game's action is based around these tun-



The game's animation is one of its outstanding features, with the principal character capable of pulling off a number of contorting moves. Well, so would you, with an alien after you...

nels. 'They were one of the hardest parts of the game to implement,' Tim continues. 'When Ripley submerges into the ducts you can't see anything outside as it's pitch black and when she's outside you can't see into the ducts. Finding a way of having this natural transition from a fairly well lit scene to pitch darkness, without the player knowing what's coming next, was very hard to pull off.'

It's in one of the massive tunnel sections on the fourth level that the game takes on more of a Gigeresque feel as you find yourself emerging into what looks like the aliens' main breeding ground. The whole place is smothered in gunge and secretions. Slime drips from the walls and ceilings whilst face-huggers scuttle around everywhere. It's here that you will find the main use for your grenades as randomly located and barrels of Quintacetaleen, an extremely volatile and flammable chemical. If you shoot them you'll be blown sky high, but by keeping your distance and tossing a few grenades at them you should be able to start a chain-reaction totally frying entire tunnels of aliens at a time. Your hardware isn't unlimited but extra packs of bullets and first aid can be picked up on route.

BIGGEST IS BEST *Aliens^3* looks set to be the biggest and best arcade/console game ever released on the Amiga and if all goes to plan it could even topple Team 17's *Alien Breed* from the number one horror slot. The sound of deep fried face suckers, sampled explosions and alien screams are enough to bring anyone back for more. And until the game is officially released none of us will be able to sleep at night.

ALIEN^3

THE FILM

It is one of the most eagerly-awaited films of the year. And it certainly has a tough act to follow. Steve Merrett takes a look at Alien^3 – the film and Acclaim's new game...

WELCOME TO THE NIGHTMARE First of all, in space no one could hear you scream. The second time round, it was war. Now it's hiding in the most terrifying place of all. Yes, the bitch is back, and despite what the press say about Sigourney Weaver, the phrase describes the creature starring opposite Ripley in the third (and probably final) instalment of the Alien films.

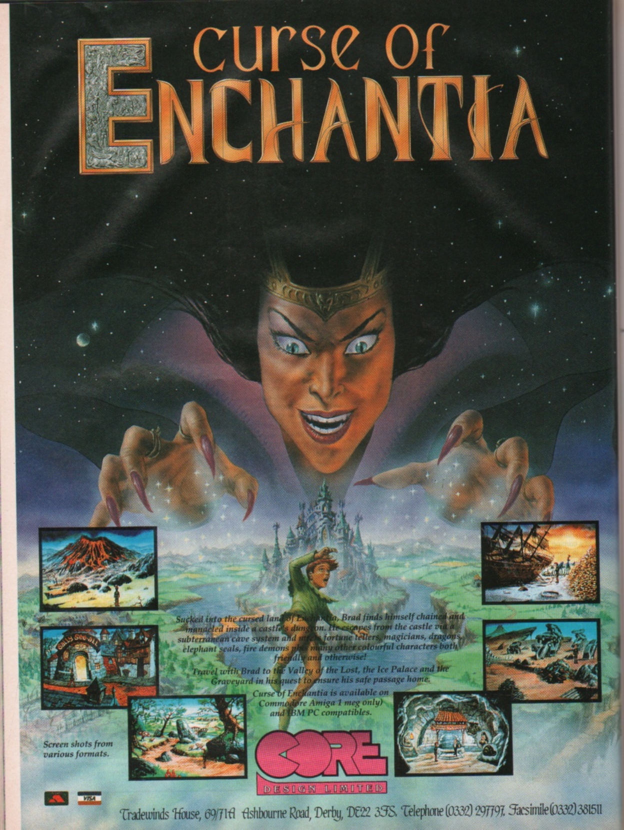
In 1979, on a windswept planet known only as LV57, a party of space truckers were seen entering an organic-looking spacecraft in search of the transmitter responsible for a Mayday call. It was to lead to a deadly confrontation against a creature which was to revolutionise the popular image of the 'Man In Rubber Suit' monster and result in just one survivor. This survivor, Warrant Officer Ellen Ripley, was to return to her home planet of Earth some fifty-seven years later after an extended hypersleep to find that LV57 had been rechristened Acheron, and that contact with the colony had been lost. Realising that the only way to face her fears of the acid-blooded creature was to take it on and kill it off for good, Ripley joined a party of heavily-armed Marines on a hunt-to-kill mission. Once again, though, casualties were high and as Acheron was vaporised in a nuclear explosion, Ripley, Corporal Hicks, and a nine year-old girl called Newt were the only people to return to hypersleep - but not, unfortunately, to Earth...

ALONE AGAIN Alien^3 picks up several days after the events of Aliens, with Ripley, Newt, what's left of Bishop the Android, and Hicks still in hypersleep on the journey home. Unfortunately, though, they are not alone, and a skittering face-hugger's acid blood starts a fire which prompts the ship to dispose of the three survivors – and unwanted guest – on to the nearest planet. Due to actor Michael 'Hicks' Biehn's reluctance to appear in the sequel and Carrie 'Newt' Henn's aging in the eight years between films, the Producers were left with a problem of writing out two main characters early on in the film. After all, Ripley spent most of the second film looking after Newt, and to have the poor child killed at the start of the third was unsatisfactory but, sadly, necessary – but it also solved the problem of how to replace Hicks.

Thus, alone and barely alive, Ripley is found and escorted to a dark dwelling several miles from the crash site – leaving the bodies of Newt and Hicks in their cryogenic coffins. It transpires that the windy planet Ripley has landed on is called Fiorina 161 (AKA 'Fury') and it is treated by the all-powerful 'Company' (who financed both Ripley's original ship and sent the crew to locate the Mayday AND return to eradicate the Alien menace) as a prison where the workers eke out a pitiful existence whilst kept out of harm's way. Populated by a weird assortment of rapists, crooks and anti-Company 'problematics', the cast of Alien^3 is predominantly British, with Charles Dance, Brian 'Nowt Taken Out' Glover, and Paul McGann amongst the surly convicts.

As the film progresses, the surviving face-hugger which sparked Ripley's premature landing impregnates one of the prison's dogs, which promptly keels over to give 'birth' to one of the acid-blooded Aliens. Recruiting what's left of Bishop to aid her, Ripley is stunned to find out that the prison features no weaponry whatsoever, and as the Alien starts to pick off the convicts one by one, only she can end the menace for good...

PROBLEMS PROBLEMS Work on Alien^3 was troubled to say the very least. Whilst every critic is ready to put down a sequel as 'been there, seen it, bought the T-shirt', with the third in the Alien series, such speculation was fuelled by the constant hiring and firing of staff. No less than four plot lines were forwarded and ignored (including a genetic-splicing tale from



Sucked into the cursed land of Enchantia, Brad finds himself chained and manacled inside a castle's dungeon. He escapes from the castle via a subterranean cave system and meets fortune tellers, magicians, dragons, elephant seals, fire demons plus many other colourful characters both friendly and otherwise!

Travel with Brad to the Valley of the Lost, the Ice Palace and the Graveyard in his quest to ensure his safe passage home.

Curse of Enchantia is available on Commodore Amiga 1 meg only) and IBM PC compatibles.

Screen shots from various formats.

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Frank 'Batman: The Dark Knight Returns' Miller), and a further three Directors were similarly ousted before the producers settled on David Fisher. However, even this couldn't stop the prattling Hollywood skeptics, as Fisher's previous directional work had been for music videos for the likes of Paula Abdul and George Michael, leading people to believe he wasn't ready for what was a very strong Ace in Fox's hand.

Unabated, Fisher started working from a script by Vincent Ward set on a distant prison planet and setting the cast against just one creature rather than James Cameron's army in the second film. Fisher was a massive fan of both films, and admired the fact that they were both so different – a trait he wanted to carry through into his. Thus, as the movie reached storyboarding stage, with Sigourney Weaver's return as Ripley now confirmed, and the majority of the cast onboard, he decided that there would be no high-tech action and more emphasis on suspense. In addition, when working with the Alien effects team of Alec Gillis and Tom Woodruff, Jnr (both of whom worked with Stan Winston on Aliens) it was decided to make the creature more similar to H.R. Giger's original ideas. For example, the knobby head of the warrior aliens have since been replaced with a more transparent and smooth dome which acts as a powerful reflective surface during the predominantly dark action scenes which abound in the movie.

ALIEN SYNDROME

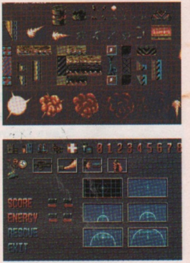
Initially, both Gillis and Woodruff had envisaged taking the Alien another step forward by adding Chameleon-style elements to the creature. This way, they had hoped for a creature which looked like wood because that was the environment it 'grew up' in, whilst they had also planned for metallic and even glass-based creatures. However, in the end it was decided that this would be taking the idea too far from the original track and may upset die-hard fans, so any additions to the costume were minimal. One thing they did pull off, though, was increasing the number of stages in the Alien's development. In the first film, it was seen as the face-hugger, before emerging as a chest-buster and eventually shedding its skin to become the fully-grown creature. In the third film, though, there are more transitions and these make for a more varied and unpredictable creature.

As with the other two films, Alien III was filmed at the Pinewood studios here in the UK, and the film covered seven massive soundstages - with the famed '007' set (named after the number of James Bond films shot there) acting as the steel mill for the film's finale. In addition, to get the bleak-looking planet surface off to a tee, a gravel-filled backlot, spanning several acres, was used with the typically dull English weather adding to the overcast look of the atmosphere. However, because of the many delays with the script and the story running massively over budget on several occasions, the film's release date was bumped back from Christmas last year, to an August release this year. In addition, this caused several of the actors to get a little 'agitated' as the hours got longer and the atmosphere worse. Similarly, when it did all come together, the preview audience were far from happy with Fisher's original ending which, without giving the plot away, was rather similar to that of Terminator II. Thus, the cast once again had to be recalled, but Weaver was adamant that she wasn't going to shave her head again. Luckily, she was won over and, after some nine months of filming, Alien III was finally in the can.

On the film's release in the US, it was critically panned by the film reviewers, but nevertheless went on to rake in a whopping $56,000,000 in its first week – before tailing off almost immediately after. It opens in Britain in August, so you should have been able to judge the results of Fisher's work for yourselves by now...

TAKING THE BISCUIT

Ridley Scot, the director of the first Alien film, directed Brian Glover, one of Alien^3's prison stars, in his first ever advert for Hovis Bread.



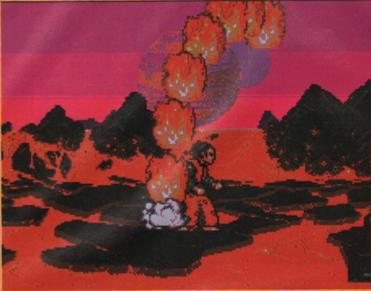
Although the Amiga version of Alien^3 was the last to be started, it's expected that the finished game will be in the shops by November. Already much of the game is in place, thanks to a speedy map editor which makes the placing of objects and scenery in the game a piece of cake. Above are a couple of screens which hopefully show the attention to detail that has been invested in the Amiga version.

CURRICULUM VITAE

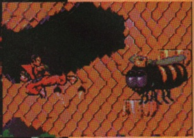
Tim Round, the Alien^3 coder, has worked for Arc Developments and on such games as *Forgotten Worlds*, *Crackdown*, *Dragon Breed* and *R-Type* amongst others. All sound effects were done through Probe and the music by Krisalis.

MONSTROUS

The Alien monster is very well documented and there are books that actually specialise in chronicling every aspect of the being's genetic, psychological and physical make-up. One amazing fact is that the creature is actually blind and tracks its prey with the aid of a movement detecting muscle at the back of its neck.



Left: Despite having their hands tied as to how many sprites the screen can display, the team have managed to ensure that each screen is kept constantly busy.



Below: An example of The Second Samurai's many puzzles. Our hero needs the crown the Queen Bee is wearing, but first he must kill her before he can reach it. Mev and Co. have kept the puzzles deliberately simple, as people complained about the first game's complexity.

THE SECOND

Sadly, Vivid Image's *The First Samurai* never got the break it deserved. Undaunted, though, the Harrow-based developers are currently busy on a sequel. Steve Merrett was there to see their new warrior...

SECOND TIME LUCKY? Can you imagine how you'd feel if you were, say, a student and your Lecturer lost the essay you'd been beavering over for the last two months? Or if you were an aspiring pop star whose top-notch bid at pop stardom was messed up by a careless music promoter? Well, that's exactly what happened to Vivid Image's Mev Dinc. After beavering away on *The First Samurai* for no less than eighteen months, Mev was on top of the World. The stunning-looking beat 'em up was winning acclaim from every magazine under the sun and collecting more awards than a Richard Attenborough film. But then, with the game in the shops for a mere two or three days, Robert Maxwell's untimely swimming lesson pulled the rug from beneath Mirrorsoft's feet – and its demise took *The First Samurai*'s chance at the big time with it.

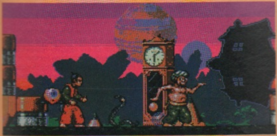
'It was dreadful,' recalls Mev from Vivid Image's North Harrow offices. 'Everyone loved the game, and loads of people were showing interest, but nobody could buy it – it was so frustrating.' In an attempt to raise cash, a deal was consequently struck with UBI Soft to bundle *Samurai* with Sensible's similarly-dumped on *Mega-Lo-Mania*, but it was hardly the release the game deserved. However, undeterred by such a major blow, Mev and his *Samurai* co-writers, Raff Cecco, Teoman Irmak, and John Twiddy were already preparing a sequel. OK, so in these days of *Robocop III*, *Indiana Jones IV*, and the like, a sequel is no big news – but for the first time since the company's inception, Vivid Image were prepared to commit themselves to a follow-up – but only on a number of premises. 'With the first game, we perfected a map editor which allowed us to piece the game screens together with the minimum of hassle,' explains Mev. 'However, although this would prove useful, we were determined not to rewrite the original game with different levels. People had also complained that *Samurai*'s levels were too long to be fun and, on reflection, I tend to agree. Thus, the first idea was to break the game into smaller sections and also perhaps opt for a more 'consolely' style to the proceedings.'

LOST IN SPACE In terms of plot, *The Second Samurai* follows directly on after the events in the first game. 'The first game was all about defeating a demon over a number of time zones,' Mev says, 'but a clue in the first game mentioned that the Demon was only vulnerable in ancient Japan – whereas the player eventually catches up with it in the future.' So does this mean that the idea for a sequel was being touted early within the first game's development? 'No,' he continues, 'there were ideas we thought would be good for a sequel, but nothing concrete.'

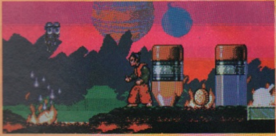
Thus, having banished the Demon into space and – supposedly – destroying it, the hero actually finds out that it has somehow survived in space and is currently wreaking havoc through the cosmos – 'a sort of twist on the Time Tunnel thing,' Mev adds. This also conveniently means that Vivid can then add whatever backdrops and scenarios to the game they like – including the possibility of a shoot 'em up stage. 'Basically,' he explains, 'we want to add as much variety to the proceedings as possible. For a starter, the levels are smaller, with the four main worlds split into

SECOND AND THIRD SAMURAI

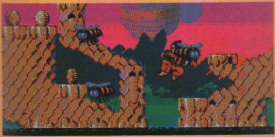
No, Vivid Image aren't planning a third game in the series – but *The Second Samurai* does feature a two-player mode for double the fun. 'Basically,' offers Mev, 'the whole game is about bonus collecting and solving the simple puzzles in it. However, if there are two of you working together, we hope to have it that you can steal each others goodies with a little cunning.' The way the system works is to have the player with most amassed booty as the 'Leader', and it is this leading sprite that determines when the screen scrolls. However, if they die, then until they collect enough money again to usurp the other player, they must follow the second sprite obediently. In addition, they will also be able to fight each other to gain collection of the many treasures within the game. 'We don't want them knocking seven barrels out of each other,' says Mev, 'but they will be able to stun each other slightly which won't cost any energy, but will be extremely inconvenient.'



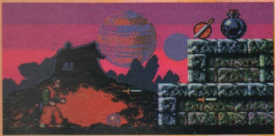
Mev and the team have tried to incorporate as much humour into the game as possible. Thus, on passing through one time zone, our hero encounters a Carry On-style Indian Fakir.



One of Mev's favourite creations are the water-logged 'fish' which appear every now and then. These wander aimlessly, but if they are slashed whilst above a flame, their watery contents will douse the fire.



The only level currently up and running is the first, Twilight Zone, level. This features an orbiting planet in the background and the weirdest assortment of creatures you are likely to see.



Vivid Image were happy with the way the Samurai moved in the first game, but they have refined them slightly by adding the ability to jump AND throw knives.

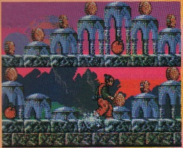
SAMURAI

four smaller levels. And, in addition to those, we want the game to have as many hidden levels and bonus rooms – for instance, one room contains a series of mini Demon heads which split into smaller versions – a la *Asteroids*.'

Actually, whilst this sounds rather dodgy, when the game is running on screen it all fits together rather snugly. The first thing I noticed is that the Samurai sprite seems considerably larger. 'Actually, he's only about six pixels higher than last time,' offer Mev. 'We felt that the original game's sprite was fine, and that he behaved as we wanted him to. As a result, we've pretty much left him alone and have just tightened up a few aspects – he can throw knives when he jumps now, for example.' The team have strived to make the game as simple to play as possible, and this is extremely apparent, as the now-clad Samurai (that's right, he's put some clothes on at last) wanders across the eight-way-scrolling play area. As volcanoes erupt into mini-fountains of fire, all manner of strange creature ambles to and fro, ready to sap our hero's health. But not all are as nasty as they seem...

LAUGH LINES 'The first game was a little too serious in retrospect,' admits Mev. 'It has all this really good action, but the only light-hearted thing about it was the sound effects. This time round, we've tried to add elements of humour to the action.' To demonstrate, he positions the Samurai above a deadly flame pit and stands ready for action. After a few seconds what appears to be a large Puffer Fish glides towards him, only to be reduced to instant Sushi by Mev's whirling blade. As it is sliced, though, its watery contents drop from the sky to douse the flames. 'See?' grins Mev. And, true enough, there's more of this kind of humour throughout the game to keep things light-hearted without resorting to silliness: Queen Bees who must be killed so that you can steal their crown and Egyptian Dancers who you'll encounter when passing through a Time Gate to a sub-game.

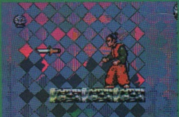
The Second Samurai is now entering its ninth month in development, with Raff handling the coding on his trusty 386 PC, Teoman supplying the graphics, and Mev and John overseeing the project (although John is heavily involved with Vivid's forthcoming *SuperSprint* clone). 'It's been fun coming up with a whole new idea,' says Mev. 'There's so much we have wanted to get in there, and the game is really starting to shape up nicely – it should surprise a few people.' You can expect the surprise this coming Christmas, before which a Publisher must be decided...



Bonus rooms can be found secreted throughout the game. Although there is plenty of cash to be found, there is no weapon shop to spend them in. Instead, they just determine which of the characters lead the party in two-player mode.

SPACE – THE FINAL FRONTIER

Located throughout each of the game's four Worlds – which include a weird Twilight Zone, a high-tech lab, a possibility of a dedicated blasting level, and back to olde worlde Japan – are a series of small pinkish globes. Pressing fire whilst standing in front of these, warps the Samurai to a strange sub-game. Depending on memory space, these will feature variations on platform games, *Asteroids*, and assorted shoot 'em ups – all of which will feature the same Samurai sprite. 'We didn't want to alienate the player by suddenly turning the sprite into, say, a spaceship, so we tried to incorporate as many game styles as possible whilst retaining the main sprite and possible fighting moves.'

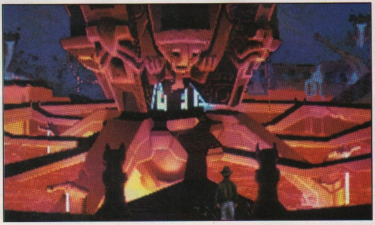


INDIANA JONES AND THE FATE OF ATLANTIS – THE ADVENTURE

Leaving the high-seas of the *Monkey Island* series behind them, Lucasfilm go in for a bit of deep sea diving in Indiana Jones' quest to find the lost city of Atlantis. Dan Slingsby jumps in at the deep end.

COMING UP FOR AIR After the swashbuckling antics of *Monkey Island* and its sequel, Lucasfilm have once again turned their attentions to the heroic deeds of Indiana Jones in their latest graphic adventure. Swapping pirates for Nazis and the legend of Big Whoop for the fabled City of Atlantis, the US-based company are once more destined to set alight the adventuring world with a tale of derring do.

Developed on the PC, the Amiga conversion has been placed in the capable hands of the same in-house team who were responsible for the *Monkey 2* conversion. Printed here are some of the early preproduction shots from the game. After preliminary pencil sketches, the broad outlines of each scene are then scanned and touched up with various graphic packages and, when approved, another group of artists add the final detail. As I'm sure you'll agree, the Amiga graphics look totally breathtaking, and with more than 200 rooms to explore in the game, *Indy IV* is sure to be Lucasfilm's biggest and best graphic adventure to date. We just hope it doesn't come on twenty disks, though!



MAKING A CHOICE At the start of *Monkey Island 2*, the player could chose either the easier Monkey Lite or the more challenging Classic mode. The advantages of this were easy to see: people new to the genre or who had struggled to complete other adventures could play the streamlined version of the game, while the more experienced gamer could opt for the classic version and encounter much harder puzzles and traps.

Lucasfilm have employed a similar method of sorting the men from the boys in *Fate Of Atlantis*. Here, the deciding factor isn't your level of adventuring expertise, but which sort of puzzle you're more orientated to. Early on in the game, the player is challenged to enter a theatre. There are three possible routes to take you into the auditorium – and all three feature the same degree of difficulty. For instance, the player has to find his way through a maze of boxes in one scenario, beat up a guard in another, or talk his way past the guard in the final choice. It is assumed that the player will pick the route which most appeals to him. By this sort of thinking, maze-lovers will opt for the boxes, verbally-inclined gamers will want to talk their way into the theatre, and action-orintated players will choose to beat up the guard. Despite serious flaws in this logic, the game is then tailored to your expressed preference. While the three paths cross one another at times, many of the puzzles and their solutions will be different – effectively giving three games in one!

Of course, such a narrow choice so early on in the game would be fairly restricting, so Lucasfilm are also planning to implement an override mechanism, so that players who want to choose a different route through the adventure can change course at any stage of the game. And even if that option fails to materialise, there's still the chance to save your position before making a choice so you can opt to double back later on and change the game's style.

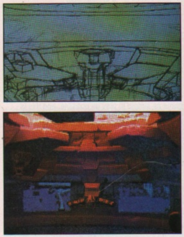
INDY BIN

It has to be said that poor Indiana Jones has had a bit of a rough time at the hands of computer game developers. He started his binary adventures in a rather dull adventure game based on Raiders Of The Lost Ark on the VCS, and was again signed up – this time by U.S. Gold – for a conversion of the arcade game based on The Temple Of Doom.

Undeterred, though, U.S. Gold promptly signed the rights to produce a game based on the third Indy film, The Last Crusade, but announced two games based on the movie. The first was a rather insipid platformer which was designed by Tiertex, whilst the adventure game was a completely different kettle of fish. Penned by Lucasfilm, *The Last Crusade – The Adventure Game* mirrored the film's plot perfectly, whilst adding enough twists to keep those familiar with the plot muddled. It garnered reviews in the 90s from virtually every magazine around, and is still worth a buy today. More recently, though, U.S. Gold have released an arcade game based on the Fate Of Atlantis scenario, but this isometric arcade/adventure is best ignored, I'm afraid.

THOSE DAMN NAZIS But what of the game itself, I hear you ask? In development for more than a year, a lot's expected from the title, especially after the praise heaped on *Monkey 2*. The plot follows the same pattern as the recently-released arcade game. It's a race against time for the world's most famous archaeologist to track down the lost city of Atlantis and thus thwart the deadly plans of Klaus Kerner and his Nazi lackies. From Iceland and New York, to Monte Carlo, to Africa, Crete and Atlantis, the game's many locations are packed with puzzles, logic riddles, action sequences and sub-games galore. There's also a love interest in the shapely form of Sophia Hopgood, a psychic with a mysterious past and a deadly secret.

Forget the dreadful arcade game of the same name from US Gold (which was so bad we binned it within five minutes of playing it), Lucasfilm's version is much superior and looks likely to capture the flavour of the Indiana movies perfectly. Hopefully, with the conversion making speedy progress, we'll have a full review in the next couple of months.



From the original design sketches, the teams working on each version can develop *Fate Of Atlantis* to suit each machine's specifications. For instance, the PC version makes use of the machine's 256-colour mode, whilst the Amiga game will opt for the slightly more restrictive 32-colours, but will rely less on annoying disk accessing.

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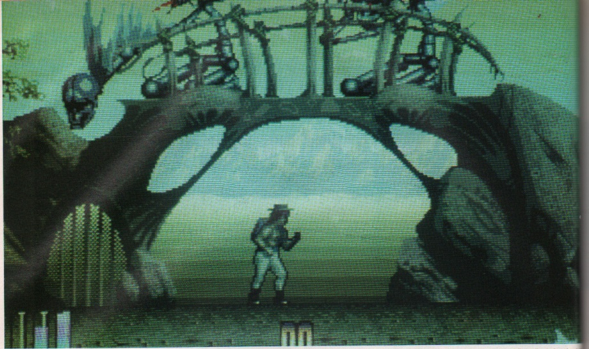


Not a bridge over troubled water, more a bridge over trouble, and a prime example of some of *Beast 3*'s glorious back

BEAST 3
OUT OF THE SHADOW

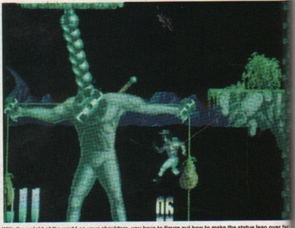
The beast is no longer a beast, thanks to a little magic from those boys at Psygnosis. Tony Dillon picks up where the squillion-selling sequel left off...

DANCING IN SHADOWS

Shadow Of The Beast is still generally regarded as one of the most attractive games ever to appear on the Amiga. OK, so the actual gameplay itself wasn't exactly the hottest ever, but the large, smoothly animated sprites coupled with the kind of parallax scrolling that makes polygons look old hat made it an instant classic. After winning dozens of awards, Psygnosis duly followed it with another scrolling adventure – albeit with a little more cerebral challenge. Again, the graphics were of a very high standard, but I couldn't help thinking that the puzzles involved were difficult to the point of disheartening. Thus, it was with some trepidation that I encountered the sequel to the sequel. Psygnosis are about to let loose *Beast III*.

Fears that it would be more of the same vanished in the first few minutes of playing the game. *Beast III* stands head and shoulders above the other two, both in design and gameplay and there's still a lot of room left for some mouth-watering graphics. The plot carries on from before. The Beast Lord has killed Zelek and, as promised, has been returned to human form. But it doesn't end there, though. Now there is a fresh challenge in the form of the demon Maletoth. The Beast Lord has dreamt that the demon has kidnapped his baby sister and, as is always the case, such dreams turn out to be prophetic. With his regained form, the ex-beast must face the demon once again.

The game is played over four levels with four completely different sets of backdrops and nasties (forest, temple, caves and castle). Taking a step even further away from the original, *Beast III* is based on a much more puzzle-orientated system where visual riddles have to be solved before you can move on, and this is really the backbone of the game.



With the weight of the world on your shoulders, you have to figure out how to make the statue lean over far enough to let you cross a chasm just off screen to the left.

MOVING ON

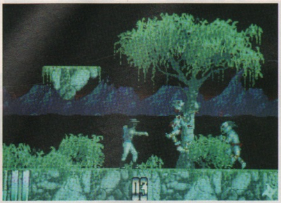
Psygnosis could never be described as a company blind to their own mistakes. When work finally began on *Beast III* a year ago, the powers that be sat down and went through both the previous products, pulling out the hits and misses of each. With both of these they tried to build a winning formula so that fans of both *Beast* and *Beast II* (not necessarily the same people) would enjoy playing this new incarnation. The resulting ideas were then put down on paper, for development team, Reflections, to bring to life...

PUZZLES

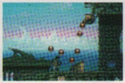
The puzzles in *Beast III* are among the most original ever devised. Whilst some are obscure, others are so blindingly logical that you'll sit about thinking 'no, that couldn't possibly work in a computer game'. They are a far cry from standard platform puzzles which merely involve placing an object in a certain location, or flipping switches to open doors. These babies require pure thought to get over. Here's a perfect example: during the first level, you come across a platform on a swinging arm. On either side of the platform are others, but the first ball only reaches the one on the right. Standing on a nearby platform, you notice it swings down and to the left, but nowhere near far enough for you to reach the far level. Walking back a little you discover a large rock. Pushing it over to the middle platform causes it to also start swinging – but still not far enough. However, jump on the platform itself when the rock is on it, and it falls far enough to let you carry on.

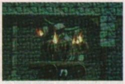
This is one of the more straightforward puzzles, and I don't want to go into too much detail about the others for fear of giving too much away. Suffice to say, though, that later on you have some fun with tables with breakable legs which can be used as seesaws and ramps, along with melting metal balls and an aquarium with a crane attached.

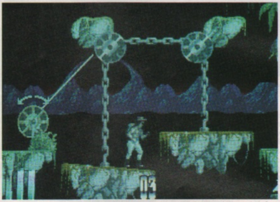
In fact, the aquarium puzzle is definitely my favourite in the game. Initially you are presented with one of those sliding puzzle games that we all used to find in our stockings at Christmas. In this case, it's a diagram showing a fishy food chain, and which of the many aquatic species is the only one that can't harm you. Once you have pieced it together, note the innoffensive fish and then progress onto the next scene. This is made up of three tanks and a crane. Stepping into the control booth, you have to lift fish from one tank to the other, where they will kill any fish they come into contact with, until you only

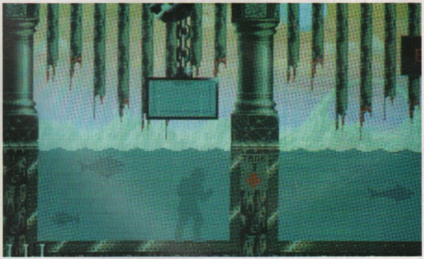

Of course there is some hack and slash involved, but considerably less than in the earlier incarnations. Remember, you are now a man with a mission.

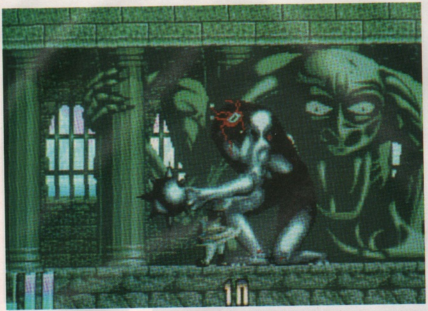
A lot of care and effort has gone into ensuring the game looks and feels as atmospheric as the previous two titles.


These metal balls can be very handy if you get them to the right place. First, you've got to work out how to get them there.


Once you've fixed two wheels to a log, you've made yourself a handy battering ram.


One of the earlier puzzles. It's not as testing as some of the later ones and it shouldn't be too difficult to figure which bit of this pulley system does what.


The fishtank puzzle. Each tank contains different kinds of carnivorous fish, and you have to move them around with the crane until only one remains – the one that won't harm you.



No Beast game would be complete without an enormous bad guy somewhere along the way, and this guy knows how to swing a mace.

have one left, which with any luck will be the 'safe' one. Get the wrong one, and you'll be dead as soon as you step into the water.

You should now have some idea of what sort of puzzles this game contains. The best way to describe them is that they are much more along the lines of text adventure problems than arcade puzzles, and that is basically the whole point of the game. There are roughly five different puzzles to each huge level (one to each disk) and each puzzle can be spread over half a dozen screens, so there's a fair bit of looking around required before you can even start to solve the visual riddles.

HAMMER AND SICKLE

There are essentially two weapons in the game, each with their own specific uses. You begin armed only with an infinite supply of shurikens, but if you look around carefully enough you'll probably find the hammers located somewhere nearby. The basic rule of thumb is that the shurikens are used for destroying things and the hammers are used for pushing things. At the start of the temple level, you come across a ball swinging from a chain. You need to get the ball swinging and then knock it down a nearby hole. If you fire the stars at it, it'll simply fall of it's chain. If, however, you fire the hammers at it, it'll begin to swing. Hitting it again causes it to swing more wildly, until it's swinging as high as you need it to. Shooting it now will (hopefully) send it flying in the right direction. By using the weapons in the right ways, you'd be surprised at what you can do.

That isn't to say that the game isn't crawling with action. Although nowhere near the blasting frenzy that was the second title, *Beast III* still has its fair share of hostile enemies – although not so many 'cannon-fodder' types as the first. The game is played over an eight-way-scrolling play field, and contains all the best aspects from the first and second games – i.e. glorious backdrops and incredible multi-level parallax scrolling.

Speaking of the graphics, you'll be pleased to know that they are still of the same high quality set by the previous runarounds. Everything has a distinct Rodney Matthews feel to it, from the mountainous backdrops to the giant skulls and fire-breathing stone gargoyles. By using dimmer colours and some clever shading, the game looks dark and oppressive – a far cry from the barrage of console-style platform games hitting the Amiga of late. The colour scheme also extends to the sprites which fit in with the game's 'look' perfectly. If there is one thing that can spoil the look of a game, it's sprites that look out of place and awkward.

BEST BEAST

Beast III is certainly very playable. As far as I can see, thanks to some superb responsiveness on the part of the main sprite, you are more likely to die by hitting the escape key rather than through loss of energy due to the way the puzzles are laid out. The trick to solving most of them is to work out the chain of events and then

start the ball rolling from the right point. Doing the wrong action before it's time causes the whole puzzle to go wrong, but for some strange reason you can't help trying again. However, if you can't stand games which rely on trial and error, I'd recommend you look elsewhere.

Beast III is one hell of a good game, easily the best of the three. As I mentioned earlier, I was a bit sceptical before I reviewed the game, but any doubts I had about the game's quality were quickly dispelled once I picked up my joystick and dived in. It looks as good as the first episode and plays better than either of the previous two. Well thought out, extremely playable and highly addictive. I don't know what else I need to say to make you buy it!

buyers guide

release date	**September 1992**
genre:	**Arcade/puzzle**
team:	**In House**
controls:	**Joystick**
numbers of disks:	**4**
number of players:	**1**
hard disk installable:	**No**
memory:	**Any machine**

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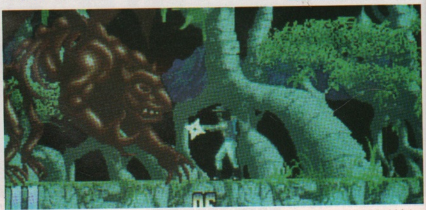

If you are the sort of person who worries about large nasties falling out of trees, then this isn't the game for you. That isn't his hand exploding, he's just throwing one of his two weapon, in this case a ninja throwing star.

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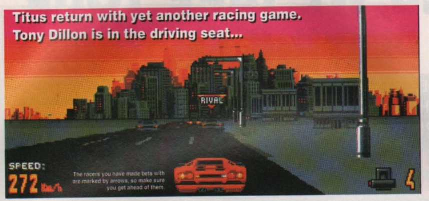

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CRAZY CARS III

FORGET THE PAST

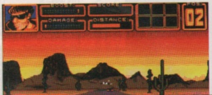
Make no bones about it, the first two *Crazy Cars* games were dire. Although they both featured highly-attractive sprites, the movement both of the road and the objects on it was so jerky that little or no impression of movement was created – and chronic sprite detection rendered the games unplayable. Naturally, I can't say I was looking forward to the third in the series. How wrong I was, though, as *CCIII* is really quite good.

Cast as an illegal racer, you are part of a league which spans the width of the USA. Starting in Division 4, you must work your way into the pole position through a combination of driving, gambling and expansion.

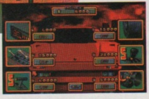
MONEY

The most vital thing to have in *Crazy Cars III* is money – and lots of it. Each race costs money to enter, and the more money it costs, the more you stand to win. But that isn't the only way you can earn big bucks. In most of the races, other drivers from your league table will be competing against the locals, and before each race you have the chance to gamble with these riders, all of whom are betting money on themselves to win. They will rarely bet more than 1500 dollars at a time but, even so, that's a lot of extra pocket money.

Cash isn't just used to enter races, though. For each season, there are a host of improvements you can buy for your vehicle. These range from a modest police radar to full tune ups and extra gears – the latter pair increasing your top speed, for instance. You can go without buying extras, but they do give you a much better chance in the harder races.



Left: Oh dear, you've upset the police, who are now on your tail. By slowing down before you reach time, they will automatically chase any other racers who are speeding, leaving you to carry on unabated.



All the add-ons currently available. Note the two gearboxes. Manual gives you more power immediately, but automatic makes driving much easier.

MAPPING IT OUT The US map displays the location of all the races left to run. The ones marked in orange cannot be entered yet as you don't have the money, but any others are ready for your attention. One exception to this rule, though, is the star in the centre of the map which represents the division challenge, rather than a race, and the only way to get onto this is to earn enough cash to buy a pass. Once you have completed the challenge – a timed race against some tough juggernauts on a narrow stretch of road – you are eligible to move up to the next, harder division.

DRIVING FORCE

Obviously, the racing section is the most important part of the game, and I'm happy to say it works well. Titus have opted for the now-standard two-tone scrolling road, although the width of the strips is far greater than in previous titles. Core's *Jaguar*, for example, has 32 strips from horizon to foreground. *CCIII* has roughly eight. This, coupled with the small number and size of roadside objects helps the game run at a cracking pace. Objects glide past smoothly, as do the other cars, and everything is fairly convincing. It lacks the sophistication of *Lotus* – especially as the corners are represented by the road suddenly bending to one side – but it still works well.

What doesn't work so well is the handling. The car tends to swing about a hell of a lot, even with the smallest joystick movements. This means that, when you overtake at high speeds, nine times out of ten you will end up hitting a roadside object. In addition, all corners look the same, yet have varying degrees of force making it impossible to compensate for bends most of the time, making accuracy a frustrating process. With practice, It is possible to get used to these quirks, but they shouldn't really be there in the first place. If it wasn't for the playability problems, *Crazy Cars III* would be an excellent racer – although it does make its forrunners look really trashy. As it stands it's quite good, but rather too frustrating to be truly addictive.

buyers guide

release date	**August 1992**
genre:	**Arcade racer**
team:	**In House**
controls:	**Joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**Any machine**

TITUS £25.99

“The best of the series, but there are better racers...”

GRAPHICS	81%
SOUND	70%
LASTABILITY	68%
PLAYABILITY	62%

OVERALL 71%

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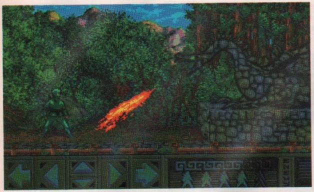
SWORD OF

They have always been popular but, after a bit of a respite, could Ninjas be back in fashion? Tony Dillon dusts up on his moves and finds out whether there is still life in the old genre...



BEATING 'EM UP

There was a time in the heyday of the Commodore 64 when martial arts games were all the rage. Classics of the genre included *Way Of The Exploding Fist* and *International Karate* to the more strategic games such as System 3's acclaimed *Last Ninja* series. Since then, things for the dark vigilantes has been a bit quiet – until now that is.

An Emperor's mighty sword has been stolen by a rival arch-Ninja. With it went his honour and, not surprisingly, he would rather have it returned to its rightful owner rather than lose face in front of his own people. As a result, he has hired you, the best ninja in the land, to get into the enemy temple and do whatever you deem necessary to retrieve it. However, unlike the many computer game heroes you keep reading about, there is no way you are going in alone.

Help comes in the form of the blessed statues of Buddha. There are four of these beauties to collect – two of of which can be found in the first two levels – and they must be placed in strategic places within the temple to open doors, letting you into previously unseen areas and generally helping your progress.

PICK'N'MIX

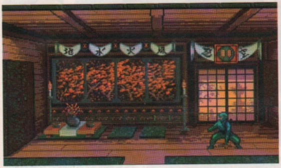
DMI's *Sword Of Honour* (*SOH*) is a cross between *Fist*, *Last Ninja* and Psygnosis' *Barbarian*. It has all the arcade elements of the first, the puzzle and strategic elements of the second, and icon control of the Psygnosis game. Not only do you get to fight your way through the game, there are also puzzles to solve, maps to make, and one or two objects to use along the way.

The first thing you'll notice upon loading are the controls. Picking up the joystick, a wide variety of directional moves coupled with presses of the firebutton send the Ninja, leaping, jumping and fighting all over the show. So what are all those arrows in the bottom panel for? If you think back to the days of Psygnosis titles such as the aforementioned *Barbarian*, you'll remember that they were mouse-controlled arcade games, with icons replacing joystick moves. *SOH* lets you play with either simultaneously, with the left button selecting a non-aggressive move and right button for more violent gestures. This might seem like an odd thing to do, but it does make for a far more playable game in places where very intricate movement is required, like jumping over a spike, when accidentally selecting the wrong direction could be disastrous.

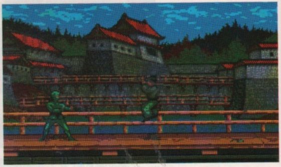
MAPPING IT OUT

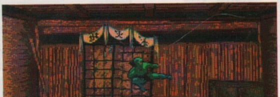
Walking across the first screen, you come across a door set into the backdrop. Pushing up at this point makes your character walk through the door 'into' the screen – which makes a change from all the 'walk left to right' games we're constantly bombarded with. Each of the levels is made up of roughly twenty screens, and laying them out this way adds a mapping element to the game. Now, not only do you have to do all the right moves to get through the exit at the end of the level, you've also got to find the thing.

A couple of screens on, and you find your first fight. This is where the game begins to stand out from the crowd. *SOH* isn't a joystick pummeller like most in this genre. Instead, careful thinking is necessary to lay the most blows on your opponent while



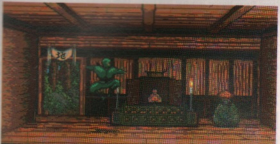
Crouching down collects any objects scattered about, like these handy throwing stars.



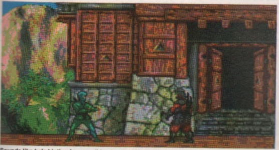


Sometimes spikes start jutting through the floor, and the only way past them is with a well-timed leap or two – where timing is critical.

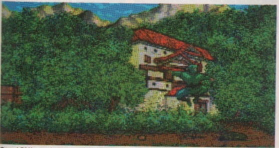
HONOUR



I'm so happy at finding a statue that I'll leap for joy. Hooray! Seriously, though, all the Ninja's moves are easy to effect and work well.



Sounds like he's hinting for something to cool him down, like the fan perhaps. This is a perfect example of *SOH*'s simple but effective puzzle elements.



Sword Of Honour features a higher body count than most Friday The Thirteenth films – but when a game is this playable, who's counting!

WEAPONS GALORE To begin with, you have only your hands and feet to fight with, which are more than capable for most nasties. During the game, there are stacks of other weapons you can collect to aid you, such as a ball and chain, a sword, shurikens and throwing knives – all of which are there to make your life a little easier. To make things even easier (Ha!) there's loads of food dotted about too, to top up your energy when things are getting tight.

avoiding his. Of course, different types of enemy require different strategies. Quick fire, close-up punching works fine on an enemy with a range no longer than your own (ie. an unarmed fighter), but as most characters carry some sort of weapon (poles, swords, etc), you have to find the right moment to leap in, attack and then jump out again.

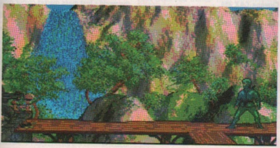
As you can see, the sprites are huge. You may think this won't give you a lot of room to manoeuvre, and you would be right. However, if you are the sort of person who keeps accidentally rolling off screen when the battle is going your way, then don't fear – help is at hand. Tapping the 'return' key at any point 'locks' the exits meaning that if you're in battle, you can't leave the screen. Tapping it again unlocks them.

GIVE AND TAKE

Along the top of the screen are ten empty boxes. These gradually fill with the items you collect throughout the game – weapons, the Buddha statues, and various other items. These are used to get past some enemy characters thereby saving your energy. The rule of thumb, though, is: if a character has something to say to you, then it's an even bet that there is probably an object somewhere that you can give them to gain safe passage. For example, early on you pick up a fan. Using the fan gives you the message 'Yeah, you feel much cooler'. A little later on a particularly hard-looking Samurai says 'It's a hot day – beware of the sun'. Bearing in mind that the Samurai is probably roasting underneath all that armour, you give him the fan, which he accepts gracefully. This side of the game adds real atmosphere to an already excellent adventure, and is probably why I'm writing this review after playing the game for five solid hours. Visually, the game is a scorcher. The attention to detail is astounding, even the way the ninja's jimmy-jams wave when he walks and the way his shadow changes shape depending on his movement. The backdrops are gorgeous from start to finish, going from mysterious paper walls with hints of action shadowed on them, to huge panoramic fractal landscapes complete with trees, waterfalls, and tiny birds flying around in the backdrop.

Sounds are simple but atmospheric. The intro holds the only concession to music in the game, but there are constant background sounds such as leaves rustling, or birds singing that paint a perfect aural contrast to the vicious slugging sounds created in battle. If the Rocky films used a car door slamming to give their punches some impact, then *SOH* uses samples from the Gulf War. It's been a hell of a long time since we saw a good example of this sort of game, and it takes something as good as *Sword Of Honour* to make you realise that. It's an excellent combat title, but there is so much more than that in there that you would be a complete fool to miss it.

CU AMIGA SCREENSTAR



Left: A prime example of some of the glorious backdrops the game has to offer.

buyers guide

release date	**August 1992**
genre:	**Combat**
team:	**Dynafield**
controls:	**Mouse, Joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**Any Machine**

DMI £25.99

"Battles, bartering and blood – cracking stuff..."

GRAPHICS	89%
SOUND	83%
LASTABILITY	88%
PLAYABILITY	87%

OVERALL 86%

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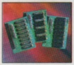

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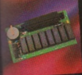

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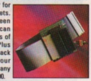

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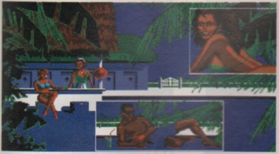
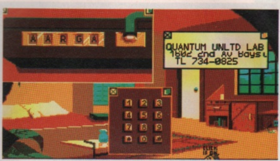


The user interface is extremely simple to get to grips with. However, as there is so much in the game to pick up, it's easy to miss vital objects.



An example of the control the player has. The heroine must examine her suitcase for a false bottom – after all, you'll never know when you'll need one.

FASCINATION

An adventure game that can only be played by those over sixteen? Tony Dillon is intrigued...

MIAMI VICE

In this, the latest game from those cunning French chaps at Coktel Vision, you play the part of a beautiful female pilot, who has just landed in Miami after your regular Paris-Miami flight. Whilst on the plane, a passenger died in your arms from a heart attack, but not before telling you of a vial of highly-important solution hidden in his briefcase that has to be returned to the Director of a top lab. Returning to your hotel with the dead man's briefcase, you are determined to do as he asks – especially since he stressed that the future of all mankind depended on it. From that point on you are dragged further and further into the mystery...

Fascination is a graphic detective story, in a similar vein to that old Infogrames' classic, *Vera Cruz*. Unlike the recent spate of new-age adventures, the whole game is viewed from a pseudo first-person perspective, with each location laid out in front of you. Solving the game involves putting any objects you may find to good use and keeping an eye out for assorted clues along the way.

The game is entirely mouse-controlled and, as you move the pointer around each location, the names of important objects appear at the bottom of the screen. Clicking on them will then either bring a close-up view, show descriptive text, or pick them up and place them in the inventory. From here, you have to figure out how to use them.

ICE, ICE, BABY

Let's take the hotel room our nubile pilot starts in as an example. Moving the mouse around, you find that the fridge is highlighted when you move the mouse over it. Clicking on it opens the door to reveal an empty ice-tray. Nearby is a jug of water so, picking up the jug with the mouse you pour some water into the tray and close the door. After a minute or two you open the door again to find that nothing has happened. Looking at the back of the fridge you find the cable resting uselessly on the floor. Picking up the plug and sticking it in the socket you are greeted with the message 'Now I can have some ice cubes'.

It's a very simple system to use, but that doesn't automatically make the adventure an easy one to complete. Each screen is packed with things to do, but sometimes the objects you are looking for are so small that the only thing to do is to scan the room completely, moving the mouse very slowly around the screen until it finally rests upon whatever it is you are looking for.

LOTS TO DO

A bad point about such object-filled rooms, though, is that it is sometimes too easy to overlook something important, resulting in several dead-ends. Thankfully, the game always offers a clue as to why you died to aid you next time round. For example, somewhere in the game there is a guard dog who won't let you take a key hanging on the wall. Trying to take it results in a Rottweiller attack the tabloids would revel in. If you die here, you are told that something sweet might have saved your life. Next time you play it, you remember to take a lump of sugar when offered a coffee.

Fascination is a very interesting game, if only because it's something that hasn't been done in quite a while. An enjoyable plot, linked with some well thought out and logical puzzles makes for a playable adventure. Ignore the rubbish about the game's '16' classification – it's just a gimmick on a game that doesn't really need one. It won't be easy completing it, but give it a go – you'll be hooked.

OO-ER! One of the most unusual aspects of *Fascination* is the large number of cheap thrills thrown in. From some quick topless shots of the main character to the Mad Scientist's hideout (below a Lingerie shop), everywhere you look there's a cheap excuse for a bikini or a bout of nudity. Even in the hotel foyer there's a soft-porn mag hidden underneath a newspaper. This kind of attraction has been used by French programmers before – anyone remember *Emmanuelle* (actually, this is written by the same programming team, so that explains it)? And while it makes no difference at all to the game, it should give the moral majority something to shout about – especially since Coktel's aim for a 16 certificate for the game could bolster sales due to the novelty value...

buyers guide

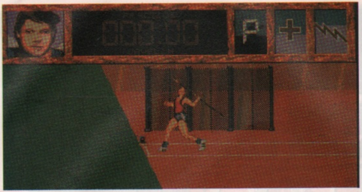
release date	**August 1992**
genre:	**Graphic adventure**
team:	**In-house**
controls:	**Mouse**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**Any machine**

COKTEL VISION £25.99

‘ Good genre example. Entertaining stuff... ’

GRAPHICS	83%
SOUND	73%
LASTABILITY	81%
PLAYABILITY	85%

OVERALL 80%



Once you have trained your athlete to optimum performance, actually taking part in the event seems a little pointless – not to mention slightly repetitive...

ESPANA The Games '92

With his cycling shorts stuffed with fruit, Tony Dillon reckons he can do better than the British Olympic team...

PLAYER MANAGER

Olympic fever has returned, and with it comes the usual wash of multi-event sports sims. Ocean have also duly jumped on the bandwagon, and have released something almost completely unlike anything seen before. Sure, it has its similarities to others within the genre but, in general, this definitely isn't a game for Epyx fans.

You take the role of a country's player/manager, looking after the entire squad both training-wise and competing in the games themselves. And there are more than enough of them to keep you busy – over thirty in all, ranging from the standard 100m sprint and relay swimming events to the more unconventional Judo and Olympic Wrestling. Oddly enough, classic events like archery and gymnastics haven't been included, but I think there are enough sports here to keep most people happy.

The focal point of the game is your office. From here, you can select an athlete, train them up, check their medical details, scan the events on your agenda, advance the date, and, of course, take each athlete out to their chosen events. So far so good – but for one thing. You may have noticed that I said 'you' in the singular sense. I'm afraid to say that this game is solo only. Although you and your mates can all control different athletes under the same national banner, you can't actually compete against a human opponent at any time. That in itself takes most of the fun out of the game.

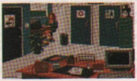
Virtually every event is played by moving the joystick in time with the on-screen moves – for example when running, you swing the joystick in time with the runner's feet. This isn't always a regular speed, however. Runners in particular are graced with curious limps. You don't have to control the players, though. If you fancy a managerial slant to the game, you can train the runners and leave them on automatic, and watch their progress from afar. Needless to say, this is very dull.

CONFUSING

The thing that really winds me up about *Espana* is the layout. Everything is presented within a hierarchy of menu screens, and part of the challenge of the game is remembering to go to certain screens at certain points. For example, on one day you have the javelin, the discus and the 100m freestyle. The order of play goes: go to office screen, select javelin athlete, go to office screen, leave office, go to action screen, do event, and so on...

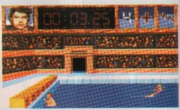
This makes for a very confusing system made frustrating because the machine accesses the disk drive every time you go to another screen! The other real problem is that at no point are you told who you are competing against, which completely kills the game's competitive aspect. Dull lifeless graphics jerk along the same old bit of track used in every game, while you spend your time wondering what you are supposed to be doing and why the loading times are so long. Even the inclusion of a full reference library on the Olympics does little to raise the standard of this appalling sports sim.

OLYMPIC TRIVIA On the reference disk included with the game you'll find two sets of information. The first contains the names and achievements of all the competitors in this year's Games, along with full details on all the stadiums (plans, descriptions, etc). Accompanying this is a full history of the Games complete with topical and interesting stories about each. For example did you know that in the 1972 Games, thirteen people were killed as a result of terrorist action? You would if you bought this..

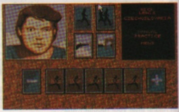


Your glorious office, complete with jiggly bits. Almost everything works in here, including the fan, the Newton's Cradle and the calculator – but not the secretary.

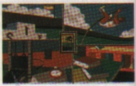
Nick Lewes, one of your star athletes. Not the most all round guy, but an expert in his field.



The swimming events are especially well animated.



Here you can choose to practise or compete in an event, or even leave the athlete under computer control.



The main menu with (from top left clockwise): action menu, statistics, office menu, reference section.

buyers guide

release date	July 1992
genre:	Sports sim
team:	Creative Materials
controls:	Mouse, Joystick
numbers of disks:	4
number of players:	1
hard disk installable:	No
memory:	Any Machine

OCEAN £29.99

"Dire events and an overcomplicated menu system..."

GRAPHICS	62%
SOUND	73%
LASTABILITY	60%
PLAYABILITY	58%

OVERALL 59%

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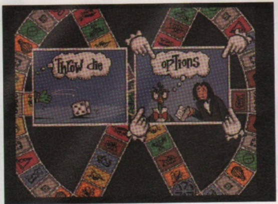
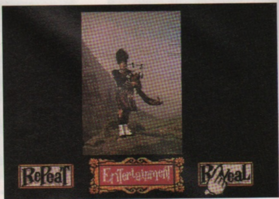


The game is about as different as can be from its floppy-based cousin. The board occupies more than 3x2 screens, and you are actually shown the dice rolling.



Questions are accompanied by a burst of sampled speech and a relevant digitised picture. Unfortunately, though, due to a rather odd bug, the two don't always go together!

TRIVIAL

So far, the CD medium hasn't really been exploited to the full. However, Domark's first foray into this exciting medium is a conversion of an old fave with a difference. Paul Rand gets trivial...

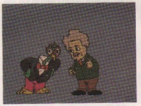
BORED GAME?

Since its creation in the mid-Eighties, Trivial Pursuit has become the post-winebar pastime of Thirtysomethings the world over. Why? Probably because everyone likes to be a smart-arse, and what better way to prove it than by correctly answering hordes of trivia questions? Which is exactly what you must do in Trivial Pursuit. Played on a round board (actually, it's square, but the actual playing area itself is circular) which is further split into numerous question boxes, each player must attempt to fill a plastic playing piece with different coloured segments and reach the middle of the board before the others. This is achieved by landing on one of the six special segment squares and correctly answering a poser pertaining to the appropriate category – you must have played it at some time...

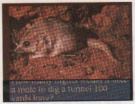
All well and good, but isn't it annoying when you roll in through the front door with the boys and girls, all of whom are champing at the bit for an hour or two of 'Triv', only to find that half the segments are missing and the dog has chewed up all the cards? Domark remedied this a few years back with home computer versions of *Trivial Pursuit* – and now they're set to sell untold amounts of CDTVs with a CD-based conversion of the game.

ENTER RUSSELL

No need to ask someone to hold the cards here: *Trivial Pursuit – The CDTV*

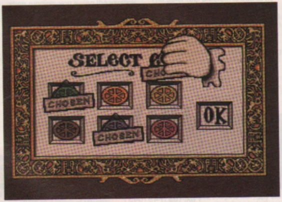


A number of familiar characters appear to ask questions, such as Einstein and Mae West.



How many nights would it take
a mole to dig a tunnel 100
yards long?

Some questions even include sound effects for added realism.



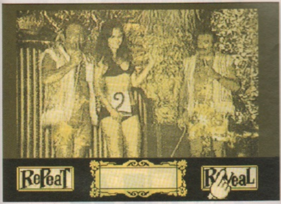
'Cheeses' are what Trivial Pursuit is all about, and whenever you answer a prize question correctly the normally sarcastic Russell applauds appropriately.

CAST OF THOUSANDS

If there's one thing you can't help but notice about CD-based software, it's the amount of people involved in their production. *Trivial Pursuit* has a cast list as long as your arm, from programmers and animators to picture and sound providers and voice-over artists. Comedienne and impersonator Kate Robbins (who you will probably have heard supplying the voice of Fergie on Spitting Image) does a fairly mean impression of Mae West in the game, while Carry On actor and star of Give Us A Clue (wow, really big-time!), Patrick Mower, supplied the voices of the other characters. Mind you, quite what Mr Mower was thinking of when he did the voice of Adonis we don't know – he's got a Cockney accent in *Trivial Pursuit!*

Repeat
Reveal

As in the original computer game, cheaters can still opt to be deceitful...

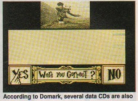


Between the two CDs, there are over 2000 questions awaiting all you smart-arses. In addition, the added speech and pictures really add to the party atmosphere when there are a number of players.

PRESENTATION

Thanks to the power of CDTV, the player isn't just treated to a dull title screen and a snatch of ropey music! On loading, the CD grinds into action with a full-frontal assault on the senses, taking the player through an animated cartoon representation of all six different categories, from History – in which your character just escapes being beheaded by a Roman soldier – to Entertainment – in which you're grabbed by King Kong and carried up to the top of the Empire State Building. The definition of the graphics isn't too hot, but the overall effect, coupled with a stunning CD soundtrack, is the business!

CU AMIGA SCREENSTAR



According to Domark, several data CDs are also on the cards.

PURSUIT

Version has its own built-in Master of Ceremonies, called Russell. He's an odd-looking bird with a distinctly plummy voice – yes, he talks – who will be your guide right to the end of the game. Russell's rustled together a few of his friends, too, to read out the questions. And what a black book this feller must have! Albert Einstein (Science), Mae West (Entertainment), Adonis (Sport), Napoleon Boneparte (History), William Shakespeare (Art and Literature), and Christopher Columbus (Geography) are all on hand with questions at the ready and quips in abundance.

All the customary rules are there, with the player rolling the dice and moving the amount of squares shown. In the likely event of landing on a normal question square, a poser will be given, which must be answered within a strict time-limit. Alternatively, land on a square with a dice icon and you are allowed a free throw. And, if you land on a segment square and correctly answer the trivia question, the appropriate wedge becomes yours. Collect all six and make it to the centre circle, answer a random question and you win the game!

It is in the question-answering where *Trivial Pursuit* differs radically to other computer boardgames. There's no need to choose from a list of possible answers – simply shout out what you believe to be the correct answer and then select the Reveal icon. The computer will then tell you the answer and ask you if that was the one you chose, at which point you select either Yes or No depending upon whether or not you were right. This unique method allows for an ability never before possible in this genre – cheating. There's no need to worry about running out of questions, either: *Trivial Pursuit* is supplied on two CDs, each containing 1000 questions, with extra question discs already in the pipeline.

MEMORY MAN

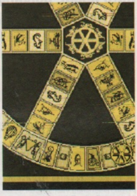
With 550Mb of available memory on each CD, the programmers of *Trivial Pursuit* have been able to run riot in the graphics and sound department. The first thing you notice is the animation of your host Russell and his question-asking cohorts. Although quite basic, each character comes to life on screen thanks to the many frames of movement. What is technically very clever is the way in which their mouths move in sync with the spoken word – and there is a lot of speech in this game. How much? Try every question, every answer, and God knows how much more. Russell is never afraid to rattle on about something, whether it be informing the player to roll the dice, or making some scathing comment on the amount scored after the roll. And, on introducing each of the question-masters he'll spend a good half-minute or so indulging in mindless conversation with them before getting back to the proceedings. Each piece of trivia has a picture attached to it, and some even have a piece of music or snippet of running commentary, too.

WHAT A LOOKER

Trivial Pursuit is a title that has obviously had an enormous amount of time spent on it – and it shows. If Commodore are on the lookout for a title that shows off their machine, this is the one. The game isn't without its faults, though. The most annoying is while the screen is showing one question, the CD player occasionally zips off and choses an incorrect piece of speech to go with it – imagine my surprise when, on hearing my CDTV ask me how many teeth does a human have, I looked at the question which was enquiring as to the colour of Yak's milk! Other little gripes include some rather nasty flicker on the digitised graphic screens, not to mention the disconcerting and, eventually, agonising click which blasts out whenever a new block of speech is loaded. And there's a totally unforgivable omission – while Domark have stuffed the front end full of humourous graphics and sound, come the end of the game there's not even a hint of congratulations to the winner, just deathly silence and a frozen screen.

CD HUMOUR

Having said that, *Trivial Pursuit* is so packed with humour, espcially in the form of the cynical Russell and his constant stream of witty, if slightly cheeky, one-liners (especially if you aren't very good at the game – he'll let you know in no uncertain terms), that all the problems, which would be extremely off-putting on other titles, pale into insignificance. Obviously, with the method of answer selection employed, this is a game that is all but impossible to play on your own, but then again so is the real thing. *Trivial Pursuit* will wow your family and friends. It has all the features and content that we all expect from a decent CD-based title – none of your direct ports, here! – and with so many questions on the CDs, its longevity is ensured. And just think, no longer will you have to suffer the indignation of scrabbling around the floor, looking for the missing blue segment!



buyers guide

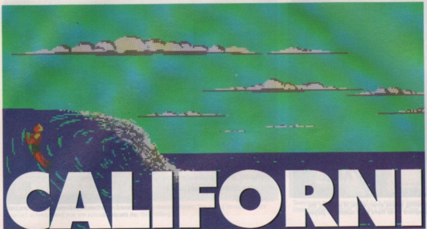
release date	**Out Now**
genre:	**Trivia game**
team:	**In-House**
controls:	**Infra-red/Mouse**
numbers of disks:	**2 CDs**
number of players:	**6**

DOMARK £49.99

Just what the CDTV ordered – this is excellent fun...

GRAPHICS	90%
SOUND	93%
LASTABILITY	83%
PLAYABILITY	82%

OVERALL 86%



CALIFORNIA GAMES II

Steve Merrett didn't want to write an intro about 'donning his loud surf shorts and getting radical', so he didn't...

FALLEN HERO

Once upon a time, there was a software development team who called themselves Epyx – apt really, as virtually every game they produced was, indeed, an epic. From the incredible platform antics of Agent 4142 in *Impossible Mission* to the race action of the classic *Pitstop II*, Epyx's name was synonymous with quality. And when they took the logical step into the world of athletics sims with *Summer Games*, *Winter Games*, and *Summer Games II*, Epyx reached their apex. Whereas other Decathalon-style games relied on the player hammering their joystick for all it was worth, the Epyx games required genuine skill if its hotly-contested Gold medals were to be earned. However, as the series grew in number, so the events have got steadily weaker. And this is rather apparent in this latest addition to the series.

LEFT OVERS

The original *California Games* succeeded because its events were well thought out and easy to play. However, this sequel uses what can only be described as 'left over' events – and it shows. Starting on a typically sunny Californian beach, you are invited to select an event by positioning a Seagull on to one of five, typically hip characters. These 'dudes' represent the five events of Hang-Gliding, Snow Boarding (yes, in sunny California), Jet Skiing, Body Boarding, and Skate Boarding - and, after continual play, these events are revealed to be extremely boarding... sorry, boring.

WHAT FINESSE?

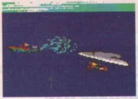
Epyx games are renowned for their presentation and general finesse, but these factors are sorely lacking in *California Games II*. No more is genuine skill required, and when taking your skateboard through a series of large drains or pitting your Body Board against a large wave for points, there's very little feeling of achievement as the assorted moves are pulled off. Each of the events is simply a matter of amassing as many points as possible by performing tricks with your Hang-Glider/Body Board/Jet Ski/whatever, and whilst this is fine for, say, half an hour's entertainment, the aforementioned lack of necessary skill soon ensures that boredom creeps in.

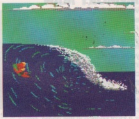
Basically, it all comes down to we've seen it all before – and executed better, too. The original *California Games* featured Skateboarding (albeit in a scrolling tube rather than the original's half-pipe), and you would have thought that, with the advances in gameplay we have seen over the last four years, that they could have come up with something better than this tawdry effort.

WIPE OUT

I am majorly disappointed with *California Games II* as it is probably the lowest the series has sunk. There's none of the innovation we are used to seeing in Epyx products, and no events which stand out as particularly remarkable – and even less that you'll play more than a dozen times. And, more importantly, there's no reason for you to buy this sad parody of a classic series...

EPIC EPYX Epyx started video game production in 1981/82 with the release of *The Temple Of Asphai* RPGs, a platformer called *Jumpman*, and *Pitstop* – a rather spiffy racing game. Following these, they then entered the world of sports sims with *Summer Games*. Distributed in the UK by Rod Cousen's Quicksilva, Summer Games went relatively unnoticed, but after U.S. Gold duly picked up the rights to import Epyx's stunning *Impossible Mission* and *Pitstop II*, people started to take more notice of the Californian development team. However, it wasn't until *Summer Games II* and *Winter Games* hit the scene that they really took off. From these on, though, things started to fizzle out. *Impossible Missions II* – good as it was – never caught on like the original and, with the exception of *California Games*, their Games series never really reached the dizzy heights of their predecessors. Perhaps it's time for a completely revamped *Impossible Mission III*...





Body Boarding is a strange little event, where the player's onscreen ego swims out to the middle of the sea using a tea tray as a raft – and then performs stunts on it!

buyers guide

release date	**Out Now**
genre:	**Sports Sim**
team:	**Creative Materials**
controls:	**Joystick**
numbers of disks:	**2**
number of players:	**1–8**
hard disk installable:	**No**
memory:	**Any Machine**

U.S. GOLD £25.99

"A complete travesty of a game – best avoided..."

GRAPHICS	56%
SOUND	47%
LASTABILITY	43%
PLAYABILITY	53%

OVERALL 41%

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WHO DARES WINS

The first prize consists of a full day spent at Combat UK, one of the country's premier paintball sites. The winner and five friends will have to make their own way to and from Basildon (where Combat UK is located). All six participants will then be put up in a hotel and fully kitted out in combat gear. The winners will be playing with and against other members of the general public. All participants must be over the age of 18.

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B. Brigade
C. Platoon

2. What is the highest military award?

1. Victoria Cross
2. Charring Cross
3. Red Cross

3. What was the name of the supposedly unsinkable German battle ship?

A. Titanic
B. Bismark
C. Marie Celeste

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2. The Editor's decision is final and no correspondence will be entered into.
3. The main prize is only available to those over 18 years of age.
4. Competition only open to UK readers.

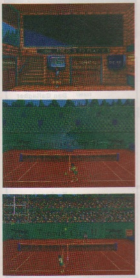
DISCLAIMER Neither CU AMIGA nor EMPIRE SOFTWARE can be held responsible for any injuries that might result from participating in the paintball weekend. So, by all means, break your neck, slip a disk or bust a leg – we really don't care, as you do it at your own risk!

TENNIS CUP II

Steve Merrett takes to the courts of Loriciel's Wimbledon-based sequel, and volleys a few shots and lobs a few high-balls before arguing with the umpire...

MEMORY CHEATS

I once read a book where some bloke was whittling on about how the memory cheats – ie. things that you remember fondly may not have been so great after all. Take all those TV programmes you used to watch, for instance. When I was about ten, I used to be a massive fan of Sapphire And Steel, but on rewatching an episode whilst round a friend's house recently, the geezer in the book was certainly proved correct. The same goes for Loriciel's *Tennis Cup*. Many a good game of *Tennis Cup* was played by myself and friends when U.S. Gold first released the game two years ago, but on seeing this almost identical sequel, it's obvious that my memory was indeed giving me grief.



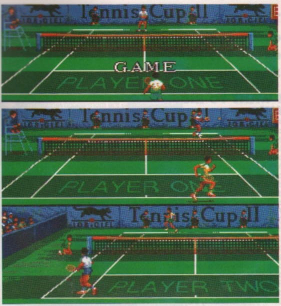
Although the animation on the players is excellent, there is no real feel of total control when placing a shot or serve.

Once *Tennis Cup II* has loaded, the player meets the first – and seemingly only – addition to the gameplay. Standing in the reception area of what seems to be a rather spacious leisure centre, your binary alter ego stands with his laden holdall awaiting your control. By moving the joystick in the requisite direction, the would-be Agassi can then opt to view a demo match or alter the game's parameters via two monitor screens, or pass through one of two doors to either practice your shots or enter a match.

On opting for the former, the player is placed before one of those ball-spitting machines which proceeds to pump shot after shot towards you. Using the joystick, the tedious aim of this section is simply to master the game's limited array of shots by hitting the balls back. Granted, the length and placement of each shot can be altered, but not to any great extent to make this section particularly necessary. Thus, with a quick prod of the Escape key, you are duly returned to the main menu screen where a match against a similarly-seeded computer-controlled player has been lined up.

THE MENU, PLEASE

Via the aforementioned menu screen, assorted details regarding the matches can be altered. A choice of clay, grass, and concrete courts are on offer, whilst the length of each match and other such sundry aspects can also be tailored. As with the practice session, the match is viewed in third-person perspective behind the player, with a split-screen mode also allowing a second player the same privilege – it also makes for some very clever animation as both faces of your player are simultaneously animated. As can be expected, your on-screen persona is controlled via the joystick, and, in a rather nice touch, if the player is left out of position, the computer will then step in to move the player into a decent returning area.



Returning shots is a rather tricky affair. The actual positioning of the player is easy enough, but the timing when returning a shot is a little too hit and miss.

Although this system sounds like a doddle to master, accurately returning the ball can be far from easy. As in the real sport, timing is of the essence, but the forced perspective used to depict the action makes this harder than necessary, as the court appears to be twice as wide as it is long. Obviously, the game comes with the ability to alter the placement and speed of shots, but these aren't quite as useful as they should be, and I found that beating my opponent was simply a matter of hitting a couple of shots to the back of the court before lobbing a short cross ball just over the net.

COME BACK FRED PERRY

I don't want to sound too damning about *Tennis Cup* as it can prove quite addictive – but not if you want a serious game of Tennis. The quirky nature of the controls and the oddly-shaped court also meant that I never felt as if I was in total control of the game, and that most of my shots were flukes.

When compared with Infogrames' stunning *Advantage Tennis*, I'm afraid that *Tennis Cup II* emerges as a rank outsider. Another major gripe also concerns its similarity to the first game. There just isn't enough in *Tennis Cup II* to warrant a buy. Tennis fans have an excellent selection, and compared to the aforementioned *Advantage Tennis* this is completely unseeded.

buyers guide

release date	**Out Now**
genre:	**Tennis sim**
team:	**In-house**
controls:	**Joystick**
numbers of disks:	**2**
number of players:	**1–4**
hard disk installable:	**No**
memory:	**All Machines**

LORICIELS £25.99

‘The Fred Perry of sims – out of date and slow...’

GRAPHICS	66%
SOUND	62%
LASTABILITY	68%
PLAYABILITY	72%

OVERALL 67%

WHAT A PONG Ironically, Tennis was the basis for the first ever video games. With Grandstand and Binatone leading the way in video game development, it was amazing how many Tennis players resembled a slab of white pixels which could only move along a vertical axis! Yes, that's right, the world-famous *Pong* was based on Tennis. Although there was no net, and no skillful lobs or spins, *Pong* was actually state-of-the-art entertainment in the late 70s. In addition, the good thing about using Tennis as its basis was that *Pong* could then miraculously become Squash (simply by adding a wall), Badmington (by slowing the ball/shuttlecock's flight), or mixed doubles Tennis (by adding two more bats). This then allowed the companies to boast that their machine boasted, say, fifteen different events – although they were basically all the same.

RED ZONE

Tony Dillon takes Psygnosis' new bike extravaganza for a test run. Can it out-do the likes of *Team Suzuki* and *Super Hang-On*?

I WANT TO RIDE MY...

With car racing games in abundance on the Amiga, it's surprising that there aren't more simulations of the far more exhilarating sport of high-powered motorcycle racing. Even a fully equipped Lotus Elan can't come close to the sensation of biking at dangerous speeds. Since the earliest days of software there have only been two worth mentioning – *TT Racer* from DI and the incredible *Team Suzuki* from Gremlin. The former was incredibly realistic and was the first simulation to let the player sit on one part of a track and watch riders on another. The latter had some of the smoothest and fastest and darn realistic polygons ever used. Psygnosis are trying to reach a compromise between the two with *Red Zone*, but unfortunately they haven't quite pulled it off.

BACK TO BASICS

The game itself is very basic. There is only one type of bike to race, and this can't be modified in any way. There are ten tracks to race around, all of which are Formula One racing car circuits. You can also choose to race one track or attempt a complete championship. When it comes to deciding how the race will look, things get a little more promising. There are fourteen different options to change the way the game looks and plays, and there are also two sliders governing mouse sensitivity and the skill level of the opposition.

LAST CHANCE TO SEE..

There are two levels of object detail and additional scenery can be switched on and off – and there's also the more unconventional 'sky detail' and 'trackside surfaces' which add clouds and a polygon blimp, or bushes and trees to the sides of the track respectively. As you can see from our screenshots, everything looks marvellous with all detail turned on. There's more to see than Microprose's *Grand Prix*, and that's saying something. However, there is a price to pay for all this detail – and that's running speed. With all options on, the game crawls along so badly that it becomes too unresponsive to be playable. How can you correct oversteer if you have to wait half a second to see if you have actually oversteered and by which point it's too late to do anything?

NO SPEEDING

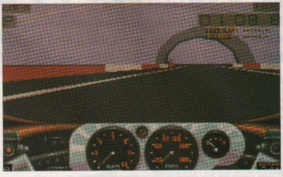
With all options off, though, things improve in leaps and bounds. The tracks may look sparse by comparison, but the playability increases enormously. It's now you realise how fast you can shoot down a straight. The problem is that the update doesn't match the speed of the bike, and a lot of the time you need to start turning before you see the corner to have any hope of taking bends at anything over ten miles an hour.

The controls aren't without problems either. Anyone who has played *Team Suzuki* will remember the true analogue feel of the mouse control, and how you could lean at any angle. In *Red Zone*, there seems to be a mere six leaning angles – and these are far from responsive. Another strange point on mouse control is that the right button, rather than the left, is the throttle. An obscure choice considering that most people are right handed.

Red Zone is very good in some areas, but limps along in others. Its biggest problem is that visually it is too slow to be anywhere near as playable as Gremlin's effort, which is why I would go for the latter, especially considering that it's just been released on the GBH label. It has been proved possible to include detailed graphics in such a sim, and to ignore such capabilities makes a game look dated and simplistic – something *Red Zone* isn't. However, at the end of the day, *Red Zone* is a bit of a disappointment.

DEATH ON TWO WHEELS

Unlike most games, it's possible to knock the opposition out of the race by slamming into them. While racing, knocking against another rider causes them to unbalance and a shower of sparks comes flying from their chassis as they hit the ground. Hit them right and they'll go smashing into a barrier, effectively removing them from the race. Just to confirm your 'kills' you are told at the end of the race how many times you endangered other riders. A sim for kill-mongers!



Ah-ha! A nice open road – but watch out for that impending corner...

Use the straight of the road for overtaking and extending your lead.

Keep an eye on your lap time, as your aim is to better this with each circuit.

buyers guide

release date	August 1992
genre:	Bike Sim
team:	Dan Gallagher (coding), Garvan Corbett, Lee Carus-Westcott, Neil Thompson, Nick Burcombe (Graphics), Andy Watkins (Sound)
controls:	Mouse,Joystick, Keyboard
numbers of disks:	1
number of players:	1
hard disk installable:	No
memory:	Any Machine

PSYGNOSIS £25.99

“Not so much Greased Lightning as Sunday Driving...”

GRAPHICS	73%
SOUND	80%
PLAYABILITY	71%
LASTABILITY	75%

OVERALL 72%

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These realistic simulations give you a 3D perspective of combat in the sky from your jet fighter cockpit or on the ground from your tank turret. Each game demands that you use your finely honed skills to decide on strategy, missions and campaigns. More of a challenge than waiting for a rerun of Top Gun, really.

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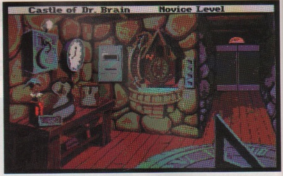
CASTLE OF DR. BRAIN

Steve Keen puts his nose to the grindstone and examines Sierra's latest brain-straining puzzler.



STRETCH THAT GREY MATTER

Corey Cole is the man behind such award-winning puzzlers as *The Quest For Glory* series. This is his latest teasing adventure and, although you won't find it as taxing as his others, you're guaranteed to have just as much fun.

The titular Dr. Brain is an eccentric scientist who specialises in the weird and wonderful. He transforms everyday objects into automated models and experiments in all things bizarre. As luck would have it he's in need of a lab assistant and is advertising in a local paper for one. All applicants must apply in person and complete a series of mind-bending puzzles that the good Doctor has spread throughout his mysterious home.

The puzzles themselves are a mixture of the mathematical, logical, practical, and miscellaneous fun. Anyone with an inbred hatred of maths needn't fear, though, as the problems involving numbers are quite well disguised and presented in such a way that you don't realise that you're actually doing them. Some old favourites such as the magic square (where you have to fill in a 3x3 cube with numbers from one to nine making all the rows add up to the same number) brush shoulders with more diverse tasks. Constructing your own circuit boards and solving binary problems as well as negotiating mazes are all reminiscent of TV's The Crystal Maze or perhaps more of its older BBC cousin, The Adventure Game (remember that?).

KID'S STUFF

The manual declares that this is a game for ages twelve to adult and this seems correct. On one hand, the appearance of the game and its graphics have a child-like charm, but the atmosphere created and the deviousness of some of the puzzles can easily lift the product above that of a youngster. The three difficulty options ensure that the game will be no walk over for the long in tooth, whilst when set on 'novice' it provides just the right amount of fun and thought provoking action for those with less of an attention span.

The game's not all fun, though, as the time spent accessing disks and the lack of speed in each level are a genuine nightmare. The mouse/cursor controls are extremely unresponsive and often more than four seconds behind in some sections. I could say that this ruined my enjoyment of the game and in most other cases it would, but *The Castle Of Dr. Brain* is so original I can't bring myself to dismiss it in that manner. This is probably the only genuinely fun piece of educational software I've ever come across and if you buy it for a child it won't be long before you whip it out of a cupboard after lights out for a go yourself. Great stuff.

buyers guide

release date	**Out Now**
genre:	**Puzzle Game**
team:	**Corey Cole**
controls:	**M/J/K**
numbers of disks:	**4**
number of players:	**1**
memory:	**512K**

SIERRA £29.95

“Fabulous fun while you learn...”

GRAPHICS	75%
SOUND	69%
LASTABILITY	80%
PLAYABILITY	74%

OVERALL 78%

* * *

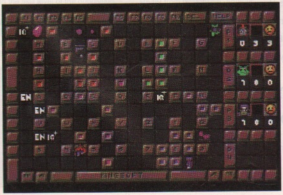
BUG BOMBER

Bugs is back in town and we don't mean the rabbit. Our Work Experience laddy, Steve Kern, sprays to kill in Kingsoft's insect bomb 'em up.

JUST BUGGING

Fans of Ubisoft's recently-released *Dynablaster* will no doubt be instantly at home with this addictive clone from German label, Kingsoft. Taking control of one of four characters, it's up to you to guide your sprite around a variety of mazes destroying the many bugs that have infested a computer.

The play area is viewed from a bird's-eye perspective, with different coloured blobs denoting the assorted nasties roaming the maze. You can use bombs to blast the meanies to smithereens, throw deadly thunderbolts to strike your enemy down, or lay mines and build protective walls. To help you in your one-man onslaught, it's also possible to enlist the aid of a bunch of dim-witted robots, whose fighting techniques and intelligence can be improved by collecting the power-ups dotted around each level.



ARMED TO KILL

The overall aim is to wipe out the many bugs that crawl around each level. Once the area is free of infestation, the player can then move onto the next level. As the 50-levels progress, more obstacles and nasties flood the screen, and the going gets decidedly tougher. As well as your own arsenal, there are a variety of additional weapons littering the maze. These include extra speed, the ability to pass through blocks, and to lay extra mines.

The game's most attractive feature is the four-player free-for-all. Here, it's not only the bugs that need to be eradicated, but your fellow players, too. As with *Dynablasters*, this is the most appealing aspect of the game and definitely the most fun. The increased number of weapons available is a bonus over Ubisoft's offering, but the awful graphics and practically non-existant sound tend to detract from the goings-on somewhat. Okay, the playability is the most important thing, but when a game looks as bad as this, it certainly detracts from the proceedings.

buyers guide

release date	**Out now**
genre:	**Maze game**
team:	**In-house**
controls:	**Joystick**
number of players:	**1-4**
Hard disk installation:	**No**
memory:	**All machines**

KINGSOFT £25.99

“Addictive *Dynablaster*-style romp...”

GRAPHICS	48%
SOUND	53%
LASTABILITY	82%
PLAYABILITY	77%

OVERALL 75%

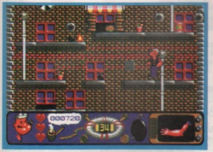
POPEYE 2

A life on the ocean wave isn't always a barrel of fun. Dan Slingsby eats his greens and gets stuck into Alternative's latest licence...

LIFE ON THE OCEAN WAVE

With a plot that mimics the classic cartoons, everyone's favourite comic-book sailor must rescue his beloved Olive Oyl from the dastardly clutches of that old sea-dog, Brutus, in this latest release from Alternative.

Popeye II is a platform game in which the player must guide Popeye up a vertically-scrolling screen in pursuit of his arch-enemy and the girl of his dreams. On the way, our muscle-bound hero encounters a variety of obstacles, such as falling girders, bombs, fireballs, bouncing springs, coconut-throwing monkeys, and collapsing masonry among many other perils. Each stage also boasts another popular character from the cartoon strip who will either help or hinder Popeye's progress. For instance, Wimpy will only let Popeye pass if he feeds him the many hamburgers which are scattered throughout the first level and Swee'pea needs to be rescued before he falls off a high ledge.



Points are scored for every bomb that's defused, the number of hamburgers or tins of Spinach which fill each level – and extra points are also available for rescuing Olive Oyl. Each player starts the game with three lives which are represented by three beating hearts at the bottom of the screen. After each mishap, Popeye loses some all-important energy. Each heart slowly decreases in size after each hit until it disappears, indicating the loss of one life. Lose all three, and Brutus comes on screen to gloat at your incompetence.

COMPLETE DRIVEL

Apart from a chance to beat up Brutus and his goons at various stages in the game, this is sub-standard platform fare with absolutely no originality. Popeye's creator must be spinning in his grave at this drivel. There really isn't anything complimentary I can say about the game, apart from its budget price, but that's really no excuse for this rot. None of the atmosphere or flavour of the famous cartoon strip has been retained: the graphics are awful, the animation dreadful, the gameplay is boring, and the concept reeks of creative apathy. The most embarrassing thing about the whole affair is that the game's a sequel! I always thought King Features Syndicate took great care in protecting the integrity of their licensed characters, but there's very little proof here. How they let Alternative get away with such a poor game for the second time is a mystery. Let's hope it sinks without trace.

buyers guide

release date	**Out now**
genre:	**Platform**
team:	**In-house**
controls:	**Joystick**
number of players:	**1**
Hard disk installation:	**No**
memory:	**All machines**

ALTERNATIVE £ 7.99

‘About as nice as eating spinach...’

GRAPHICS	44%
SOUND	31%
LASTABILITY	20%
PLAYABILITY	19%

OVERALL 22%

• • • • • • • • • • • •

LIVERPOOL

Marc D. Richards kicks off with yet another bout of soccer action, this time from Grandslam...

IT'S OFFICIAL!

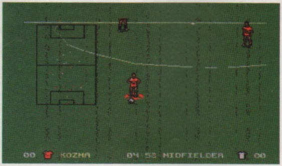
This is it, footy fans, the official Liverpool soccer sim, featuring all the members of the present team. This is your chance to guide your favourite footy team (well, if you're a Liverpudlian) up the league tables as you play in both the FA Cup and League Championships.

There are plenty of options to choose from. You can practise on a dry, medium or wet pitch; add after-touch to the ball; and choose which way up the field you wish to play. The section that'll appeal to Liverpool fans the most, though, is the team selection routine. Here, you are faced with twenty mugshots of the various team players, and you can even decide who you want in your team, and who to keep on the subs bench. You can even access an info page on each of the players' histories – although the true fans will already know most of this. Following this, you are ready to position your freshly-picked team on the pitch, in one of three formations. You will now be required to either enter the FA Cup or the League Championships.

HERE WE GO...!

Games are played vertically up the pitch, and are viewed using a weird 3D angle similar to that of Rage's *Striker*. As usual, you are given control over the player nearest the ball, and you'll have no problems locating your player, as he's indicated by four huge arrows at his feet. However, this is where the game starts to deteriorate. The player animation is basic and jerky and the speed is a little on the slow side. And as for the referee! He has to be the strictest official ever to grace the world of Soccer! If you attempt even the cleanest and fairest of tackles, he'll be onto you quicker than a sniffer dog in a cocaine field, with his deck of yellow and red cards. What this basically means is, unless you want to risk being sent off, once the opposition has got control of the ball, it'll all be down to the computer-controlled Bruce Grobbelaar to save your team from going yet another one down!

If you're looking for a Soccer sim at the moment, *Sensible Soccer* is the only game for you. So, if you want accurate passing, blistering action and excellent controls, save your wad for Renegade's classic. To be fair, though, although not a complete disaster, *Liverpool: The Computer Game* is only recommended to real Liverpool fans and die-hard soccer sim addicts who need yet another fix..



GRANDSLAM £25.99

‘Average in every respect – there are better about...’

GRAPHICS	68%
SOUND	51%
LASTABILITY	67%
PLAYABILITY	71%

OVERALL 70%

buyers guide

release date	**Out now**
genre:	**Football Sim**
team:	**Arc**
controls:	**Keys,Joystick**
number of disks:	**2**
number of players:	**1-2**
hard disk installable:	**No**
memory:	**1 Mb**

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VFM

Hooray! Despite leaving us this month, Steve 'Mary' Merrett has still found time to bring us another round-up of the new budget releases. God, we'll miss him...

STEG THE SLUG

Apparently, the Spectrum market went ape over the exploits of this gallant Gastropod, and it would be easy to dismiss Steg's success on such a machine purely because it was the only game released for it that month. However, *Steg The Slug* is actually very playable. Cast as the slimy Slug, the player has been charged with the task of feeding his young off-spring. These hungry little beggars are a little fussy, though, and demand grubs for their grub. Thus, the weird platform-based action gets rapidly more difficult as Steg scours a series of grub-filled mines in search of his family's dinner. As a Slug, Steg can slime up walls to get to the grubs, but there is also a succession of rocket packs and bionic legs to take him to the previously-inaccessible snacks. And once he gets to them, they can be taken to the end of the level by encapsulating them in a bubble – providing they don't come a cropper on the game's many hazards.

Okay, so it all sounds rather silly, but *Steg* is a very playable twist on the platform theme. New additions to the gameplay are steadily introduced to keep things interesting, and some of the later levels get very tricky indeed. Oh, and it also comes in the most gross-coloured box I've ever seen (you know when you've got a cold and your phlegm literally glows in the dark? Well, that's the colour I mean). What more could you ask for?

60%

CODEMASTERS OUT NOW £7.99

STUN RUNNER

I can sum *STUN Runner* up in two words: total crap (actually, total wasn't my first choice, but never mind...). A conversion of the stunning vector-based coin-op, this Amiga version has none of the speed or style of the original. The Amiga is more than capable of producing fast-moving filled polygons, but somehow the coders behind *STUN* didn't realise it and the game is as fast as a stalled Skoda. And when you consider that the actual – rather vacuous – coin-op relied on its speed to keep it interesting, you'll realise that you've just spent eight quid on a complete piece of sh-(Snip – Ed).

22%

HIT SQUAD OUT NOW £7.99

GO FOR GOLD

'Ooh,' thought I, as *Go For Gold* rolled in for review, 'a conversion of the rather spiffy (not to mention extremely old) C64 waggler, *Hes Games*, for the Amiga.' However, on booting the disk, *Go For Gold* is revealed to be an updated version of Epyx's *The Games: Summer Edition*. After a series of excellent 'Games' games (if you'll excuse the phrase), the Epyx series started to go a little awry with both the *Winter* and *Summer Edition* titles. The main reason was a lack of decent events, and it also seemed that Epyx's nice touches and elements of humour were starting to fade away. That said, though, *Go For Gold* is by no means awful, and events such as the Hammer Throw show the touches of genius normally associated with the series. At the end of the day, though, the six events just don't gel together somehow and don't seem to require real skill to make achieving those gold medals all the more satisfying. A sad demonstration of a fading idea.

KIXX OUT NOW £7.99

69%

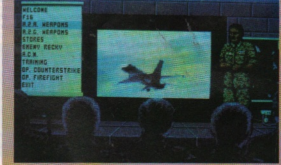
SUPER MONACO GP

Although a little quiet of late, programmer ZZKJ was famed for handling REALLY tough arcade conversions. First of all, he impressed us all with his technically-stunning (if a little slow) *Powerdrift* conversion for Activision, before eventually moving on to *Smash TV* for Ocean. In between these, though, he also produced this massively underrated conversion of the popular Sega racing game. *Super Monaco* is your basic, bare bones race game. There are no thrills and spills of a long distance Police chase, and there are no Smokey And The Bandit-style road race scenarios. What we have here is just a good track circuit, featuring some of the fastest screen updates the Amiga has seen. Opting for a choice of automatic or manual gears, the player must first complete a test circuit within a set time before taking place in a 'proper' race. However, this is easier said than done, as the car proves extremely responsive and can fly off the track with incredible regularity. This initially proves very frustrating, but once the tendancy to whizz the car around every corner is lost, a race game featuring true skill is unveiled. This is an excellent game, and is definitely an essential budget purchase.

80%

KIXX OUT NOW £7.99

FALCON

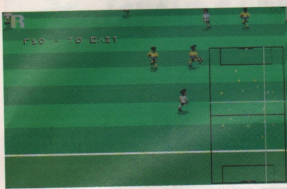


game of **THE MONTH**

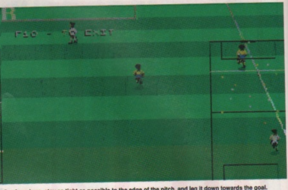
Arguably the most famous flight sim of all time, *Falcon* was - and indeed still is – a classic of vector dog-fighting. Released by the now-defunct Mirrorsoft over two years ago, the game puts you in charge of an F16 as you undertake a series of related missions. All the action is depicted using fast-moving filled polygons, and it was also the first game to allow you to pan around the craft whilst it was in flight. Everything about *Falcon* is polished and impressive – even when compared to the many more modern games which have since followed – and with the addition of a cable-based two-player mode, the fun is effectively doubled. A stunning budget release, and if you are one of the handful of people who has never played it, stop alienating yourselves and go and buy one...

ACTION 16 OUT NOW £9.99

89%



1. Whenever possible, always try to take the ball down the wing. Thus, as soon as you receive possession, cut a short pass across to your nearest winger, or run it yourself...



2. ...from here, stay as tight as possible to the edge of the pitch, and leg it down towards the goal. It's doubtful as to whether the defenders will be able to catch you, so you'll have plenty of time...

STRIKER

If Rage's excellent Footy sim is proving rather hard to beat, here are a few pointers from the development team behind the game...

FORMATIONS

Against obviously superior competition or a difficult computer-controlled opponent, always choose a defensive formation which also utilises a sweeper system – 5-4-1 or 5-3-2 are normally the best. Obviously, though, this method is reversed for the likes of Mexico or Chile, where the 4-2-4 and 2-3-5 formations allow you to attack more aggressively. Whatever formation you decide on, always make sure that your style of play is suitable for it. For instance, if you prefer to make your attack by legging it down the wing before crossing it in to the centre of the penalty area, then once again the two attacking formations listed above will ensure that a good number of players will be waiting to receive the ball.

Finally, if you find it difficult getting or keeping possession of the ball, then opt for a good midfield-orientated formation (3-5-2 or 4-4-2, for example). Then, when you get ahead, switch to the defensive positions to keep the lead, and vice versa if you are struggling.

GENERAL TIPS

1 Running down the wing is an excellent way to gain ground – just make sure your crosses are accurate.

2 When in possession of the ball, fart around outside the penalty area so that, hopefully, one of the opposition hacks you down for a free kick.

3 Although everyone groans when John Barnes does it, whenever you are under pressure, always pass it back to your 'keeper.

4 Never use a player to chase an opponent currently in possession of the ball. Wait for a defender to attack them, and go in hard for the tackle – you'll stand more of a chance that way.

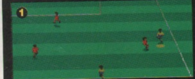
5 Although this is a rather obvious point, aim for the ball when tackling – not the player!

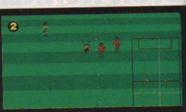
6 When an opponent has possession of the ball and is on the attack, it's possible to shoulder barge them out of the way without resulting in a foul in their favour. Practice this, though, as it can prove quite tricky.

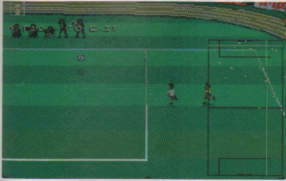
7 Use sliding tackles to speed up your movement across the pitch and toward the ball.

8 Desperate times call for desperate mea-

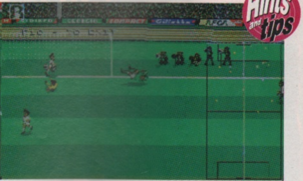
GENERAL TIPS DIAGRAMS







3. ...as soon as you start nearing the goal, either run it right down to the line and turn to chip it into the box, or float a long diagonal ball into the area...



4. ...if all goes according to plan – and it nearly always does – a player should be ready to receive the ball for either a crack at goal or a more impressive diving header.

sures, so always foul an opponent if they are looking as if they pose a threat. They stand less chance of scoring from a free kick than they do a conventional shot.

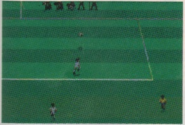
9 Keep certain areas of the pitch rigorously guarded – ie. the corner areas, the penalty box, and any areas in this vicinity.

10 Force your opponent into a central attacking position as they are quite as adept when shooting directly at goal – and keep them away from the wings.

SCORING TECHNIQUES

These are reliable tactics which, even if they don't result in a goal every time, will allow you a chance to nip in and score from the rebound...

1 Run down the wing, and when you reach the byline cross the ball, adding aftertouch as you do so. This will swerve the ball out of the goalie's grasp and, hopefully, onto the head of one of your forwards. Two quick jabs of the firebutton should then send the said player in for a diving header.

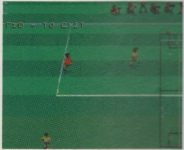


2 What Rage affectionately call the 'Jammy Jimmy' goal is a variation on the above method but, rather then heading for the byline, when you are roughly 25 (onscreen) yards from the byline, cross the ball into the area using aftertouch to swing the ball towards the goal. A forward who is running in from the right-hand side of the pitch should then be able to latch on to it a simple kick – and with the 'keeper well out of range...

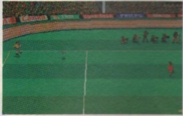
3 When in the box, a gentle sideways kick in front of the goal makes the 'keeper rather jittery, forcing him to dive for the ball and allowing you to tap it past him.

7

4 The corner of the penalty box can be used as a neat guide for an easy goal. Just shoot diagonally from it adding plenty of aftertouch and it will loop behind the goalie.



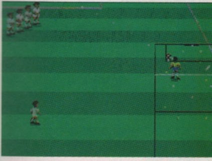
5 When you take a corner, vary your use of aftertouch. When taking a corner from the left, add loads of right bending, and, obviously, the opposite from the right-hand side of the field. With a little practice, these can then be met by a well-placed forward nearly every time with an overhead kick or header. In addition, heavy aftertouch when booting a corner can often result in a goal.



6 As a rule, ALWAYS follow through when shooting. This way, if the ball careers off for a rebound, you can meet it nearly every time.

7 It's also possible to dribble the ball around the goalie by performing a diagonal run just past him (not too close, though, as the computer is very generous with his sprite detection). When you get past him, just run the ball into the net.

8 From a standing position directly in front of the goal, it's possible to score by curling the ball around the 'keeper. Run down the wing and pass the ball to a conveniently-positioned player, who can then welly it around the unsuspecting goalie.



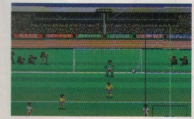
FREE KICKS

When taking a free kick, position the guiding line slightly away from the goal and around the wall (if there is one), and, adding loads of power, boot the ball as hard as possible. Then just add aftertouch to curl the ball just inside the near post.
Alternatively, just place the kick so that it lands at the feet of a player in the box – this should then disorientate the goalie.

Finally, for a laugh, just welly the ball into the defensive wall to see them all fall down, clutching their gonads (copyright 'The Vinny Jones School Of Footy')!

PENALTIES

These are extremely easy to cock up, but a pretty much sure-fire way of scoring is to wait until the cursor is to the right of the screen, before using a quick tap on the firebutton to crack it home – press it for too long, though, and it will soar over the bar. As for saving penalties, this is far from easy. Basically, just take a guess as to which way he's going to kick it – just like real life!



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ISHAR

RPG fans rejoice! Following on from last month's epic guide, here's the second and final instalment of Silmaril's fantasy adventure solution.

AN IMPOSSIBLE LOVE

Gate crash at Irvan's house in the village of Halindor and he will tell you that his daughter has been kidnapped. She used to live in the city of Elwing and if you rescue her and bring her back to the old gent he will reward you with a vital key (you'll also find Thom in Elwing. He will give you five monk robes for later use). You will find Irvan's daughter in the town square, but before you can persuade her to accompany you back you'll have to lose a member of your party.

Leave the town by the road opposite to that by which you entered and return North to the village of Halinor and to Irvan's house. One of your party has fallen in love with the girl and the only way he'll let her go is if you give him the anti-love potion (the essential ingredient is Tortoise spittle). Get the key and you will be advised to build a 'wall' (four people in a line will suffice). Now go West – watch out for the wizard – and take the teleport.

THE DUNGEON OF VALATHAR

Gather together food, water-pistols, and treasure and search everywhere. Numerous passages open up thanks to the levers and the keys collected along the way. You might have to go to and fro between the town to strengthen your team wall. Open the door with the key collected at Irvan's house. At the first crossroads turn left and you'll find the house of the living dead brothers. More exploration reveals another key.

A VISIT TO THE DARK KNIGHT

Continue along the route to the East crossroads. Turn South, and fight the Dark Knight before continuing South. Another key can be found in the labyrinths. Return to the Dark Knight's Room and open the door facing the East labyrinth. Find the exit to the East at the crossing and turn North. Continue and retrieve the key from the cul-de-sac and use the levers to open up a passage. Return to the previous crossing, continue South and then turn East (the passage opens according to the position of the levers previously seen. Follow the wide corridor until you reach the cul-de-sac, collect the key and return to the Dark Knight's room. Keep going North until you reach a wall and open the door to the East.

THE WILD LEVERS

If you keep going East, you'll find a labyrinth consisting of two parallel corridors interspersed with doors which are operated by levers. Each one operates two doors simultaneously. Take the passage South then move East, ignore the lever then access on the left. Operate the lever and return Eastwards to the aforementioned room. Turn right and then to the left pull the other lever on a half turn. Now return towards the previous room (West) then turn right and left again. Pull this lever and you can exit the maze by continuing along this corridor towards the East. At the end turn right and then left. You'll now find yourself in a smaller labyrinth populated by blue ghouls. Moving along the corridor in a Southernly direction you will find a key and teleportation point.

FOUL AIR

Walking South, you must turn East immediately. At the end, turn left and you'll arrive at another room with a lever. Make each person drink the Worgaz potions (Aponea), and pull the lever. Gas filters into the chamber, but you will be protected. Follow the corridors and look in all the nooks and crannies for treasure. When you enter a new chamber pull the lever and the gas will disappear. This room has two access routes. The one to the South is the shortest and mildly interesting, but the path to the East is indispensable. After passing the skeletons you find another key in a cul-de-sac. Return to the chamber, pass through the area of foul air and exit the room.

CONJURING TRICKS

From the wide corridor you have to find an access point heading West which will lead you into a huge diamond shaped chamber. In the centre of the room a demon is casting spells at you. Try the doors to the North and West and then take the access route to the South at the end. Continue in a westerly direction and you come out into a broad corridor. Just to the right there's a lever and a passage leading East. Follow this and open the door that's controlled by the previous lever. This is the entrance to a spider-infested room. Collect the runic tablet. This room has illusionary walls so try them all and collect the different articles you find. Now return to the lever in the corridor. There's a very large labyrinth to pass through heading West (watch out for the ghouls). Try and find the door facing South in the broad corridor. This door opens onto a small room guarded by a fearful magician that you must kill and whose talisman must be taken. The talisman gives the wizard his strength. Exit the room when you have the item.

On one of the walls in the labyrinth you'll find three levers. The right combination of up and down must be found in order to open the door to the extreme South East route.

FIX BAYONETS!

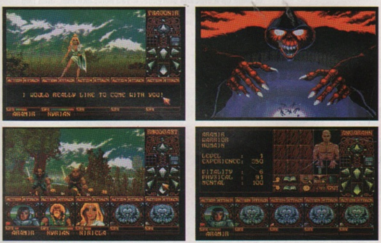
Follow the corridor and you'll come face to face with Medusa. The use of a psychic shield is recommended here. When she's dead, a flame-spitting dragon will try to burn you. He seems to be quite a way off but he's well within range if you hit out. At the end of the passage will be a door. Dress everyone in the monk robes and open it. Kill the monk on the other side and cast a protective shield. Now teleport.

ISHAR

Finally you are in the temple of Ishar. Once again a very long corridor awaits your exploration. Before seeing Krogh you will have to fight three monk guards with fairly well-developed psychic powers. Use the psychic shield again and kill them. When it's over another protective shield could be useful.

KROGH

The grand magician casts flashes of lightning at you and even if you manage to escape he will give chase so there's no other solution than to go in studs up! If everyone has a runic tablet, and your magician has the talisman, Morgula can cast 'anti-Krogh' spells and Krogh is having a particularly bad day you might just do it! Now prepare for the end of game sequence.



I WOULD REALLY LIKE TO COME WITH YOU!

ARAMIR
WARRIOR
HUMAIN

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EXPERIENCE: 350

VITALITY : 6
PHYSICAL : 91
MENTAL : 100

From claiming a key to finally making your way to a confrontation with the dastardly Krogh, your journey through *Ishar* will be considerably easier thanks to our incredible player's guide. Prepare for battle...

ADVENTURE HELPLINE

Once again, Tony Gill is here to aid any ailing adventurers in the murky worlds of RPGs and adventure games. So, if you are far from a Dungeon Master, or just a struggling Knight Of Darkmoon, drop him a scroll...

TIME WASTERS

This month, I've been wasting yet more of my life, stuck down the electronic rabbit holes offered by the likes of *The Secret Of Monkey Island II*, *Eye Of The Beholder II*, and *Might And Magic III*. As far as *M&M III* is concerned I'm suffering from a great credibility gap between the review scores and my personal experience! I'm willing to believe that there is a great game buried in there somewhere and I am doing my best to find it – without much luck! If you have a hard disk then it may well be worth the effort, but I would still be reluctant to recommend it. However, the Lucasfilm *Monkey Island* story continues to amuse and baffle. But for a company whose stated intentions are to entertain and not distress gameplayers, I feel they should re-examine their policy, as they are giving me a headache. I like the game, but I defy anyone to say that it's not hard. Just in case you failed to notice something that's very important because you were too busy looking at the pretty pictures, I'll tell you that you need to 'Pick Up' the sign at the end of the bridge to get the spade.

As for *EOB II*, I must confess that I like it more than I ought to. I'm sure they could have done a better job of the graphics (you should see the flash PC version!), but, apart from that, it's a magnificent achievement and all RPG action fans will be doing themselves a favour if they buy themselves a copy. The game seems to go on forever, but each new area is not as simple as the previous ones. There is genuine variety, and the traps and tricks all fit together to build up a credible storyline. If you don't like this, then flog your Amiga because there won't be much better coming along for quite some time.

POLICE QUEST III

Being a street cop is a dirty job, but somebody's got to do it. Luckily for us, Nicholas Golding from Newbury is out there keeping the streets safe – but even he needs a helping hand from Joe Public occasionally. Nicholas needs help on Day 5 of Sierra's *Police Quest III*. It's a fair cop, Guv, here is what you need to know. Once you have used the police computer to read file 199145, and you have plotted the spot where the next murder will take place, you will receive a confirmation message. Get the number of Morales' locker from the note in her desk. Ring Dispatch, and go to the Psychologist's Office and get the file. Now's the time to use the white car parked downstairs to drive to Palm 8th-9th Street where you believe the murder will take place. Stop here, and walk to the outside of the saloon. Use the tracking device on the 1976 Sedan and then look at the car. Return to your car and get the scraper and envelopes from the case in the boot. Use the scraper on the car in front then enter the saloon. After a while, a pool player will arrive, 'eyeball' him and you will recognise him from the computer files. Try to talk to him, but be ready to eat the dirt when the bullets start flying. You can now use the tracker to follow the escaping felon (don't worry he won't get far). Eventually, you will be returning to the Police Station and then on to the hospital for a passionate embrace before the day is out. Sound exciting? It's just a pity the game limps along like an old police dog.

BLOODWYCH

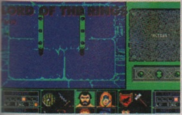
Now you and I may be wondering what wonderful new game we should buy next, but Tom Gates of Surbiton has no such worries, for he is still playing *Bloodwych*. Come on laddie, give it up! There are games programmers starving to death for the want of your cash. I'll only help you out of your present predicament if you promise me that you'll invest in a game from the 90s! There are two gems to be found and you tell me that you have only managed to get hold of one. How do you know there are two to be found if you haven't found them both? Still, for Tom and all the other misers out there, here is the definitive solution.

The tower is in two halves – left and right. The door locks behind you as you enter. In a two player game, each team should attack a separate side and meet at the top. Two keys are required to enter the final level and they are placed one at either side of the tower. During your climb up one side, you will find a Serpent Key and you must use this to open one of the two doors into the Serpent Crystal level at the top. On the floor between the two doors is a chromatic key. Go down the stairs and find the chromatic door and go through this and find a pit. Jump into the pit and this will lead you to the top of the other side of the tower, and another Serpent Key. In the crystal level, you will see the green gem in the wall. As soon as you take it you must run to the left, dodging past the monster until you reach an open area where you can fight and manoeuver.

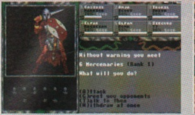
You can rest when necessary by locking yourself in the rooms behind the stairs. You should have the Moon key by now, so it's time to get out. Press one of the buttons in the Crystal room and this will remove a pillar from the exit. Go to the exit room and jump down the pit. Down here is a serpent key and some armour. Go through the portcullis then through the Serpent door. Pass through a cavern, picking up the key and potion, and then use the key to enter a large room with a box room to one side. Find the grey key here then jump into two pits. Kill a dragon (easier said than done!) then press a button to get out.

EYE OF THE BEHOLDER II

There are times when you are so hungry that pizza and coke just can't crack it, and Brian Webb of Birmingham has just experienced such an occasion. Actually, it's not our friend who is so ravenous but a group of six doors. Is this a weird letter or what? Having smashed his way through the hellish hordes that guard *Eye Of The Beholder II*'s cellars, Brian has now come across these magical doors who



One reader has had a bit of a 'reversal of fortune' in Electronic Arts' stunning *Black Crypt*. Can you make sense out of the 'cryptic' clue?


Without warning you meet
6 Mercenaries (Rank 1)
What will you do?

(A)ttack
(G)reet you opponents
(T)alk to them
(W)ithdraw at once

Mapping the torturous landscape of *The Legend Of Faerghall* is difficult enough, but when you've got the constant interruption of pitched battles, it can be impossible!

Four leafed clover.

The entrance to Elvira's film studios looks a bit spooky, but don't be put off because there are eight disks full of monstrous mayhem waiting for you inside.

demand to be fed before they will open up. Each door gives a mystical riddle which suggests the special object that is required to be served up, but our confused chef doesn't know his artichokes from his escallops. The objects required are: a piece of parchment, a few rocks, any potion, the 'Hunger ' sword, a Ruby and, finally, some rotten food. Don't worry if you don't have any rotten food, just hang onto it for a while and you will find that it will go past its 'sell by' date and turn nasty.

ULTIMA VI

If, while you were storming through *Ultima VI*, you noticed a wide-eyed individual wandering around looking lost, you were probably looking at Neil Wood from Great Yarmouth. Having got himself all fired up to go hunting, Neil has had to admit that he doesn't know where to begin with the game. In this case, I suggest you begin your career in the Land of Britannia by being a good guy and saving the Shrine of Compassion from the nasty gargoyles.

To liberate the shrine you'll need to obtain a certain Rune and its Mantra. Your search for the Rune begins in the museum where you'll find three musicians. Ask the child called Ariana about the Rune and she will tell you that she has it, but she won't give you anything until you get her Mother's permission. Go and seek her Mother who is working as a barmaid in the Blue Boar and say 'Rune'. She will tell you to tell her daughter that it is Okay to give it to you. Having got the Rune and the mantra 'MU', it's time to head for the shrine. Follow the eastern road out of town. Travel until you pass the second stream, and head east till you see the shrine pillars. In the centre of the circle is the shrine itself. You'll need to clear up the gargoyles, before using the Rune on the shrine. After you use the Mantra, you'll be able to take the moonstone from the altar.

There are a few more shrines which I suggest you liberate and here are a few tips for them. The Shrine Of Honour needs the Rune from Trinsic (it's in the altar in the town), and its Mantra is SUMM. The Shrine Of Justice wants the Rune from Yew. It's found under the plant near the south door in the tavern. The Mantra is BEH. The Shrine Of Sacrifice is in the desert to the east of Minoc and the Rune is obtained from a character called Selganor. As a music lover, Selganor will want you to play him a tune on some wooden pan pipes before he will part with his treasure, so you will first need to find a woodcutter for some wood, a sawmill to cut it, and a music shop to have the pipes made – the Mantra for this one is CAH. The Shrine Of Spirituality needs the Rune from Skara Brae and it's found in Marney's chest. The mantra is OM. The Shrine Of Valor is in Jhelom. First get some sherry from Lord British's Castle, then look for a mousehole in a tavern. The mantra is RA.

EYE OF THE BEHOLDER

Paul Lindbridge of Crowborough thought he would be smart and buy *Eye Of The Beholder II* as he was about to finish the first game. The snag is that weeks later he is still stuck in the first game. The door which you can't open, Paul, is released by a secret button on the South wall of the room you are in. The alter in Oracle of Knowledge on Level 4 is activated by placing an Orb of Power in it. I guess you'll have already found a number of these magical items on Level 12 where you are stuck.

If you return to Level 4 and activate the altar, it will say interesting things about the weapons and magical items you are carrying. It's really a kind of 'Identify Item' booth. Another tip for anyone suffering from poison wounds on Level 4 is that there is a room with healing potions to be found in the NW corner of the level. You can open the door, collect all the potions, close the door and then collect the potions again. All you poor souls who are still searching for the Stone Gem can give up, because there actually isn't one to be found in this game. There is a Stone Gem in *EOBII* with a magic portal to match.

LEGEND OF FAERGHAIL

Assuming you can put up with the game's annoying mapping exercises, there is lots to do in *Faerghail*. You can, however, get rid of the mapping aspect once you find the crystal ball in the Dwarven Mines. Dang Tran Vu who hails from Helsinki has written to say that he's worried about the way the mine's exit collapsed when he left it. Don't worry, Dang, as there are a number of ways back into the mines – especially if you've got dynamite. Dang also asked what he should do in the Abbey. Go to the south-west corner where you will meet a monk who you should recruit. Go west along the south side and find items in the fifth and seventh cells. Go down the stairs in the south-west corner. On the second level go east of the stairs to a wall, then north, then west. Here you should find a hole in the floor which you must jump into.

BLACK CRYPT

Peter Waddel of Birmingham is stuck on level 7. There is a plaque at location 13,20 which the magical word HCTIWS written on it. Peter has stared at this word for weeks but its meaning remains a mystery. There are two alcoves nearby, one of which contains a bow and the other a chest. Pete is sure there is a connection between these items and the plaque, but he doesn't know what. The clever ones amongst us realised instantly (well almost!) that HCTIWS is the word SWITCH in reverse. If you simply switch the two objects between the alcoves a secret passage will open at location 11,19.

ELVIRA II

Elvira II – The Jaws Of Cerberus is quite an eyeful. It's a big game in more ways than one - and I mean that most sincerely folks. So here are a few hints which will come in handy on level two of the haunted house. Before you nip upstairs, cast the following spells:

Protection – use the soda can.
Breathe Underwater – three of them using the popcorn, gum (you had at the start), and the cupcakes.
Healing Hands.
Luck (remember that four-leaf clover from under the Studio sign).
Ice Darts (several).
Unseen shield.

Enter the Stage 2 elevator (the one with the big 2 on its entrance). When you enter the stage area, drop the wallet, the computer disk, the wrench, the mirror, the hairspray, the towel and the seltzer bottle. Turn left, go through the doors. You are now in the living room of the haunted house. Take the helmet and the left gauntlet from the suit of armour on the right. Don't put anything on just yet. Enter, and on the inside there is a desk to the left. Open the drawers and take the prayer book and use it to mix an Unholy Barrier spell. Take the padlock. Go back to the living room and take the antique vase from the corner shelf. Turn this into a Detect Trap spell. The bucket next to the fireplace is used to cast another Protection spell. The door to the right of the fireplace leads to a library. When you pass this way later, to get past the poltergeist simply drop the kiddy toys from the bedroom upstairs. Apart from the odd scuffle, that should see you through...

WIZZO
HP
FOOD

Take a swipe at any barrels you find in the catacombs below the Temple Of Darkmoon. The magic dust that you'll find is very useful if anyone gets 'stony-faced' about your leadership.

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CIVILIZATION

If you're stuck on Sid Meier's latest epic, Andrew Luckett has been doing a bit of empire building in his spare time and offers these handy tips to anyone with global conquest on their mind.

Greetings from he who makes mortals tremble! Abe Lincoln of the Americans

Working with other leaders makes your life easier, but make sure to check in the biogs what kind of leaders they are. This will be to your advantage when bargaining.

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CIVILOPEDIA

Keep your cities well guarded. It's no use having a wide stretch of towns if it only takes one hit on each to wipe them out.

RIGHT OR WRONG?

There's no right or wrong way to play *Civilization* – it's all down to the individual player and the way he or she approaches the game. The most enjoyable level to play is the Warlord level with four civilisations competing against each other. Pick your tribe wisely as each leader has different idiosyncrasies, eg. Genghis Khan (Mongols) can be expected to be very aggressive at the expense of developing his own cities, but Mao Tse-Tung (Chinese) is generally concerned with building a strong civilisation and doesn't seek to expand aggressively.

Whenever you play the game it's always an advantage to have the Civilization Advances Chart (found in the back of the manual) to hand. This can help you build more advanced units quickly eg. Alphabet + Masonry + Mathematics = Catapult unit. If, in the early stages of your civilisation, you concentrate on the above advances you'll soon be able to build the catapult which is stronger than any of your enemy's units. It's also an idea in the early part of the game to lower the tax rates thus increasing your science rate.

IN THE BEGINNING...

There are a number of strategies you can use at the beginning of the game to make things easier in the later stages.

1. The earliest units you acquire should be selected for defensive, offensive and mobility factors. Defend your home city first but use more mobile units to open up the frontiers of your civilisation. Your first two militia or other military units should be used to defend your city. Fortify the units in the city because they can only be destroyed one at a time. If you fortify them elsewhere, even with two or more to a square, an enemy unit could destroy all the units in one move.

2. Whenever a unit becomes redundant because of newer technologies, always replace it for a more capable unit. It's pointless paying for and feeding an older unit when more efficient ones are available – eg. replace the Cavalry unit for a Knight unit when they become available.

3. Across the world there are many minor tribes. Moving on to them can uncover wealth, wisdom, friendly tribes or angry barbarians. Because of the barbarians you should only move onto these squares with a military unit with a high defensive factor.

4. When the technology arises you will be able to set sail, first of all in Triremes – these are not deep water vessels and can be lost at sea very easily. It's always a good idea to keep them near to the coast, but if you get an opportunity to get to the nearest unexplored land mass, do so although it's extremely dangerous to stay in deep water for too long. When undertaking a voyage on a ship, you should always take a diplomat, settler, and a strong military unit. With these units in tow, you can cope with any problems that may arise. The military unit will take care of any barbarians, the diplomat will make peace with other civilisations and the settlers will occupy any virgin territory.

OPENING HOSTILITIES

When playing *Civilization*, you can play defensively or offensively. Start off by building up your defenses and technologies and making peace treaties with other civilisations (do this so you can put all your energies into new technologies and building more military units). When a neighbouring civilisation becomes a threat or a problem, you will need to open hostilities, but before this you should gat an idea of the enemy's technology level. To do this, you'll need to establish an embassy in an enemy city (use a diplomat for this). If the enemy is more technologically advanced than you, you might consider postponing your aggression until you are more evenly matched. You can catch up with the enemy in one of four ways:

1. Concentrate on research, building libraries and universities and devoting a larger portion of your revenue to scientific research.

2. Exchange technologies with friendly civilisations (preferably not with the one you are about to go into war against).

3. Build a Great Library: any time two other civilisations obtain the same advance, it becomes yours as well.

4. Steal the technology by using your diplomat.

TAKE IT EASY

When you are at war, don't be afraid to take a breather during a long campaign. You can push your troops too hard – exhausting both your resources and your people's willingness to fight. From time to time, your enemies will offer to make peace with you. If need be, accept the treaty and use the time to rebuild your combat forces. During any respite from war, place ships on sentry outside enemy harbours, post sentries along land borders and fortify units around enemy cities. Have diplomats ready to undertake spying and sabotage missions as soon as hostilities are resumed.

Later on in the game, you will be faced by the nuclear dilemma, either because your use of nuclear weapons will lose you points in the game, or because the enemy, after threatening your civilisation, reinforces its threat by revealing it a nuclear arsenal. An enemy is unlikely to use nukes, but tread carefully all the same. It's a good idea to build an SDI system in your capital city or other important metropolises. If you use nuclear weapons you should have plenty of settler units in readiness to clean up the mess.

WINNING WAYS

There are two ways to win at *Civilization*: either defeat all the other civilisations (this may not be possible as they may be as strong as you) or win the space race to Alpha Centauri.

To win the space race, you must complete the Apollo program. After this you will be able to build parts of your spaceship. As construction proceeds, keep an eye on its characteristics - Population, Support, Energy, Fuel, Flight Time and Probability of Success – all should be at 100% or more!

FIVE STEPS TO HEAVEN

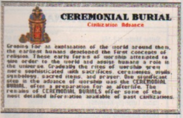
1. The more propulsion units your starship has, the faster it reaches Alpha Centauri. The more colorlists you attempt to deliver, the more your starship will weigh. Try to install two propulsion units for every complete colonist package – including habitation, life support, and solar power modules – you intend to launch.

2. Guard your capital! Losing it brings your interstellar program to a very abrupt end.

3. Watch the clock. You must reach Alpha Centauri before your reign expires.

4. If other civilisations launch before you do, you should make a mad dash for their capital in the hope of capturing it before their starship reaches its destination.

5. Don't launch unless your arrival time is less than 20 years. If it is more than that, add more fuel and propulsion unit.



CEREMONIAL BURIAL

Civilization Advance

Groping for an explanation of the world around them, the earliest humans developed the first concepts of religion. These early forms of worship attempted to give order to the world and assign humans a role in the universe. Gradually the rites of worship grew more sophisticated with sacrifices, ceremonies, vigils, symbology, sacred items, and prayer. One significant step in the advance of worship was the CEREMONIAL BURIAL, often a preparation for an afterlife. The remains of CEREMONIAL BURIALS offer some of the most detailed information available of past civilizations.

You don't always have to follow the advise of your counsel when selecting your advances. Just develop towards the civilisation you want to have, keeping the advances chart by your side at all times.

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GRAPH

Graphics DIY is a series of articles which aims to help with all your graphical queries. As we explore the uses of *DPaint*, we will offer you useful tips and short-cuts which will prove invaluable in your work. This month, Peter Lee invites you to beam down to an alien planet...

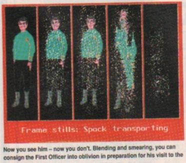
PART 3

Stardate, September 1992. The USS Enterprise, under the control of gifted CU Amiga readers, has taken up station around an endangered planet. Uhura has relayed a cry for help, and Spock is currently beaming down. Our mission this month is to draw the said planet and add assorted plot devices to it. There's no time like the present, so off we go...

BEAM ME UP

True, not a great deal has happened in the previous two episodes of Star Trek: The Amiga Animation series, but we've already covered a lot of ground in our efforts to boldly go where few Amiga animators have gone before. Using our storyboard based on a Trek incident, we've already mastered some pretty beefy animation techniques. By once again using *DPaint III*'s low res 16-colour palette, we'll be putting the Special into Special Effects so that, when you come to do your own home-grown animations, you can call on your new-found skills. We'll create each portion of the animation as a separate item, to be either appended into a longer sequence later or played back in comic-book style. We'll get to saving and editing later as, for now, the show must go on...

DPaint comes with many sophisticated image processing tools, and for the first segment of this month's animation, we'll be using the Smear option. This allows colours to be splattered and mixed on screen. The effect is just what's needed when it comes to having Spock transport down to the planet. Kirk is already there (animator's licence!), but it will be nice to see inside the transporter room and watch the Vulcan fade away. The effect is achieved in a similar way to the technique we used last issue when we built the text up from darkness. However, we need to improve this a little to give a realistic and convincing teleport. The transporter room and Spock should be drawn separately, so that we can create an animbrush of the character without worrying about interfering with the background, so work against a plain black background. Once you have drawn Spock, create 25 blank anim frames, and paste him into the SPARE screen – which we'll be using as our drawing area for copying the image into the animation later. The start of the sequence should have Spock looking normal, so copy the spare screen with him on it into the first five frames of the animation. Set the Mode menu command to smear and, with a medium-sized round brush, brush up and down the drawing to mix the colours. After each blending session, set the mode back to its original COLOUR setting and, using the fine airbrush tool, eat away a little at the picture with black as your foreground colour. Thus, in addition to muddling the image, you are also erasing minute parts of it, too. Don't forget to copy each amended image from the spare screen into the next frame of animation, and control the look of the picture so that on the final frame Spock is just a memory. Once your frames are complete, pick up the image as an anim brush and save it. Load in your background (the transporter room), and paste the animbrush on to it – making sure Spock fits into the transporter bay before you start! It's not much fun having a 6" vulcan and a 4" transporter! There is no end to how professional you can make this sequence to look as, by using the smoothing tool or speckling light blue throughout what remains of the image as it fades, you can add plenty of finishing touches. Having seen the sequence on TV countless times, you should be able to bring your own interpretation of it while still retaining its magic.

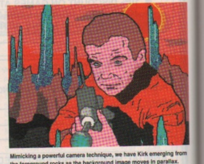


Now you see him – now you don't. Blending and smearing, you can consign the First Officer into oblivion in preparation for his visit to the transporter room.

GOING UP

Creating the effects of perspective can be achieved reasonably well using *DPaint*. In the same way we created the horizontal parallax scroll, we can give the feeling of depth with vertical movement. Adding it to our storyboard context, we have seen the alien running across the screen, and now we want to cut to a close up of Jim Kirk appearing from behind the foreground rocks ready to stun the creature. The simple way to do this would involve a brush of the character popping up from behind a static background. But – and you may have sussed this already – simplicity isn't what we're about. We need to display a real-world, dramatic sequence which capitalises on our animation skills. The effect has three main parts, identical except for the image we will be moving, and the speed at which it travels.

1. You need a background. We're still working with the 16-colour palette so all our sequences are compatible, but this doesn't prevent the design of some pretty weird and wonderful alien panoramas. Initially, you must draw the sky in whatever colours you prefer – perhaps adding a few wisps of cloud or maybe a sun or two.



Mimicking a powerful camera technique, we have Kirk emerging from the foreground rocks as the background image moves in parallax. How's it done? Easy if you follow our step-by-step tutorial!

ICS DIY

2. Create 30 animation frames based on this background.

3. Switch to the spare page to create the mid/far background. Selecting a two-colour range from the Palette requester, dither the colours heavily before filling, to give nice grainy textures for the rock formations – quickly drawn with the fill free hand tool.

4. Cut out this rocky image as a full-screen brush, and go to the first animation frame.

5. Call up the anim movement requester, and enter a value of minus 50 in the X distance box. Preview the animation to ensure the brush moves down screen, then select Draw.

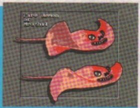
6. We now need to add Kirk to the equation, so load him into the spare screen, and cut him out as a brush. Flipping between spare and anim frame, you can position the Captain so he is fully visible, and while on the spare screen, register this position on the spare screen – this is where he will end up at the end of the sequence – by clicking the right mouse button.

7. From the first frame, call up the movement requester and enter a value of 200 in the X box (no minus sign). Click on the icon showing an arrow hitting a blob – this tells *DPaint* to animate the brush TO the position we previously registered, not FROM it as would normally happen. Preview the scene again and, if all's well, draw the frames.

8. Finally, we need a foreground image which will begin by hiding Kirk, before moving down to simulate a shift of camera angle. On the spare screen, draw the foreground to fill the lower half of the screen, using the same techniques as in the background brush. You should try to add more detail – say, nooks and crannies or the odd rock.

9. Cut out this foreground as a brush and follow step **5** again – but this time the brush needs to move more quickly, as we're telling the eye that it is nearer to us than the background. To do this, enter a value of minus 150 in the X box (making sure you deselect the move TO button – we want the brush to move from its registered position this time).

10. Preview, then draw the animation. Kirk should rise dramatically, and so should you, having now mastered multi-directional parallax scrolling!

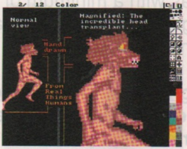


Real Things also has vast potential with other subjects – take this manta ray from the *Sea Life* collection; Add a ghoulish face. and have it fly gracefully across the screen. You can become your own Dr. Frankenstein thanks to the great images which *Real Things* provide.

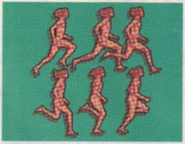
ZAPPING

Once Kirk has emerged from the rocks, he needs to fire his weapon to stun the running creature. While a laser bolt would have sufficed, I decided on a web of crackling energy to subdue the alien. This is easily achieved and gives an immediately recognisable effect. First, using white as the pen colour, draw several arcing branches coming from a central point. Now pick up the drawing as a brush and, using light blue, press key O to outline the forks of energy. Do the same with dark blue to give a neat glowing effect, and paste it down on the spare screen.

In addition, the animation of Kirk rising can be extended to allow for the gun shot. With the last frame displayed on screen, select the Anim/Frame/add frame menu option, and the current image is duplicated into an extra frame. Press the A key nine more times to repeat this and give us 10 images of Kirk at the end of the sequence. Now cut out the energy brush from the spare screen, and with the first static frame of Kirk on screen, register the brush so the energy bolt's centre is on the weapon's barrel. Call up the animation move requester, and in the Z value box type 300. This will enlarge the brush in successive frames, to give the impression the bolt is coming towards the viewer. Preview, then draw.



Having pasted down the anim brush onto successive anim frames, we can now add the monstrous head. Use the magnify option for detailed work. Once completed, the head can be cut and copied to each frame before the new anim brush is picked up.



These are individual frames from the *Real Things*' anim brush before we customise them for our needs.

ALIEN BREED

Making the man of your dreams isn't so hard after all, girls...

IT'S A REAL THING

If you find it tough to draw a particular object, or don't have the time, an elegant solution is to use someone else's work! The Amiga has spawned a vast range of clip art (predrawn images) which is available from Public Domain libraries or from professional software houses. In the case of our Star Trek alien, I decided to use a piece of animated clip art as the basis for my being. *Real Things* have produced several disks full of beautifully-animated creatures – ranging from horses to sharks and elephants.

Rather than tinkering with one of these, though, I decided on a human form. Using a running man from the *Real Things*' Humans collection, I kept the body and simply remodelled the head to give it a humanoid/wild beast look. If you have any of the *Real Things* disks, you can conjure up some pretty weird hybrids – horses with flapping wings, for example. The point is to use them in a stimulating way and make them suit your needs. The human running animbrush is ideal for our storyboard, and acts as a good foreground image to the horizontally-scrolling backdrop.

HOW TO RUN

The figure, once its monstrous head has been pasted over the existing one, can run across the screen in front of the scrolling planet. This effect offers a superb feeling of speed, and makes what could have become a bog-standard effect into something special. To edit the anim brush, paste it into the required number of frames and, using the magnify tool, make your enhancements. To save time I drew one head, and cut and copied it to all the frames. Once you've tweaked the image, pick it up as a new anim brush ready for pasting on to the backdrop.

You will find the colour palette for *Real Things* will not match ours, so to overcome this you need to access the Brush/Change Colour/Remap option. *DPaint* will try and get as close as possible to the colours already chosen for the screen, but you may have to manually alter some animbrush colours if they are totally out of whack.

DPaint III has a clever in-built way of painting down an animbrush across the screen without using the movement requester. Using our running man as an example, here's how it's done. Using the right mousebutton, select the line drawing tool, and enter the number of frames in the N Total box. With the line tool selected and your animbrush active, hold down the left Amiga key and draw a line from the left of the screen to the right. Your animbrush cells will stretch and, when you let go of the button, successive brush frames will be drawn onto the rolling animation.

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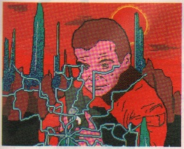
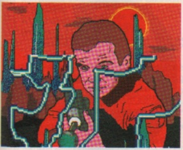
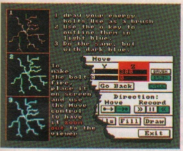


A forking bolt of energy is released by Kirk towards the creature.



Using the Z factor in *DPaint*'s animation movement requester, the bolt appears to travel towards the viewer – you'd better duck!



1 draw your energy bolts. Use as a brush
2 Use the o key to outline then in light blue.
3 Do the same, but with dark blue.

To make the bolt fire, place it on screen and use the Move control to have it zoom out to the viewer

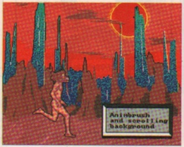
How the bolt is assembled – two key presses turn a bland squiggle into a pulsing beam of energy.

IMPORTANT: Ensure the frame count box is set to 10, otherwise the brush will be drawn over the beginning of the animation sequence.

ROLLING ALONG

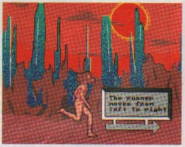
If you want to include a full-screen horizontally-scrolling background in your animations it's not as hard as it sounds as *DPaint* works out all the tricky stuff. Draw your background, making sure it reaches the edges of the screen, and make sure too that the left side matches the right side (to do this, simply cut a full-depth narrow brush from one side, flip it horizontally (x key) and paste it on the other side). You may need to re-touch the place where the brush was pasted, but you have to ensure it matches what's already there – it's better to do it now rather than try to cover up a ghastly mess caused by 30 uneven animation frames. Next, cut out the whole screen as a brush and, having created a reasonable number of frames (32 is a useful figure), call up the animation movement requester. Enter a value of minus 320 in the X movement box, and draw the frames. The brush moves across the screen from right to left, leaving blackness as it shuffles out of view.

We need to link both parts of the scenery now, and to do this we have to change the brush handle. Pressing ALT/Z allows us to move the spot where the mouse pointer is attached to the brush, and we need it over to the extreme left. This lets us carefully position the brush – remember, it's the same full-screen brush we picked up earlier – a whisker off screen on frame 1, and stamp it down. If you can imagine it, what we've done is set the brush's new starting position butting close up to the edge of the original screen. Now, when we call up the animation requester again the program will draw the brush on screen, watching it follow hot on the heels of the original moving background. If you find a black line between the two, you obviously stamped down the second brush a little too far to the right. You can time the speed of the scroll to suit your needs by altering the frames per minute value from the Anim/Control/Set rate pull-down menu – you can also use this technique to tinker with the multi-layered parallax scrolling.



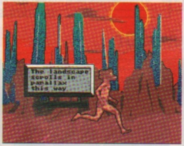
Animbrush and scrolling background

Once the horizontally-scrolling background is in place, it's time to add the figure.



The runner moves from left to right

As the background scrolls across in an already rendered sequence, the running figure moves from left to right. The animbrush of the creature is a hybrid of a *Real Things*' human and a tailor-made monster head.



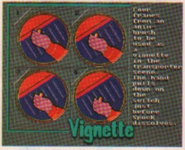
The landscape scrolls in parallax this way

By using *DPaint III*'s move feature and the line tool, you can let the program do all the hard work in moving the character from one point to another.

VIGNETTE

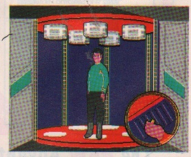
In comic books, it's possible to combine long shots – large-scale views – with smaller close-ups. These are called vignettes and can combine elements of a story. A tight close-up of a character's eyes is probably the commonest use of this technique. Picture it – a darkened path alongside a lonely canal, a noise, and panic. The main picture would be of the general scene, and inset into it would be those worried eyes....

This idea translates extremely well to computer animation – in our case it melds perfectly with our cartoon-like presentation. The scope is endless in the realm of providing information about objects. If you decided to draw your home, it would be nice to create an animated vignette of each room and superimpose it on the exterior view. Edging back to our project, the vignette technique can usefully be incorporated in the transporter scene. We have a standard-issue transporter bay, and Spock about to disappear. Nice enough, but it needs that little extra that only a computer animator can give it. And all we need add is the yeoman's hand sliding the transporter controls just before Spock vanishes. Simple, elegant – and not too hard to draw! The vignette sequence can either be created at the same time as the main scene, or as I prefer to do, create it as an animbrush, and paste it on to the existing frames. It will only use another 10 frames (which will all be of Spock waiting in the bay), and is also low on memory usage. Once the hand is drawn, you can move it manually over the control switch instead of invoking the Move control requester – a case of pasting down the hand, advancing one frame, and moving the hand a little more. Surround the whole animbrush by a vivid cartoon-style frame, and an already clever sequence just got better.



Four frames from an anim-brush to be used as a vignette in the transporter scene. The hand pulls down on the switch just before Spock dissolves.

A vignette is a small superimposed item of animation on the main sequence. Here, a yeoman's hand works the transporter controls....



...which in the main sequence features Spock disappearing from the transporter room

NEXT MONTH

The alien encounter reaches its conclusion and, on the way, we pick up even more professional animating tips before the credits roll . We'll also be rounding the series off with a run-down of animation presentation packages to help you get the most out of your skills.

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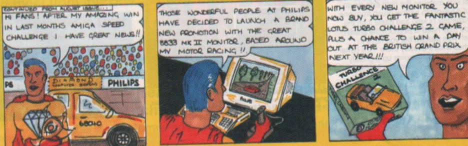
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Within the next section anything can happen. Every month, we will be getting to grips with strange new software, seeking out intelligent peripherals and inviting you to...

GETSERIOUS

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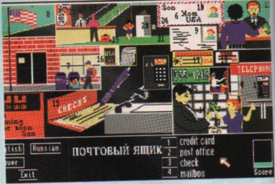
CU AMIGA TOP RATED

The top rated accolade is for non-games products scoring over 90%. They will definitely be worth the money and are likely to act as a benchmark for future releases.



The pictures may look a little simple, but at least you can make out what everything is. Pronouncing them, though, is a different matter entierly...

AUDIO GALLERY: RUSSIAN

Comrade Veitchski takes a look at a new way to learn an old language.

LEARNING THE LANGUAGE

It's always been difficult to learn a language. You can always buy a set of books, but when you come to actually speak, nobody will understand a word you say. As ever, though, there is always a solution. Fairbrothers Inc. have decided to try and harness the sound capabilities of the Amiga, with its colourful but memory-efficient screen display to provide a true multimedia approach to learning. It has been proved that teaching is more effective when several levels of data are presented all at once. *Audio Gallery*, spread over eight disks, provides a series of 20 images, all of which are linked to a particular theme – e.g. the weather. Individual items in the pictures are numbered, and clicking on the number prompts a digitised female voice who pronounces the word in Russian. The Russian text and a translation appears in a window at the bottom of the screen simultaneously. With about 20-25 different items labelled on each image, this gives a total vocabulary of over 400 words.

When you have experimented with all the words you can use the same system to test yourself. There is also an auto-testing mode available where the computer will ask you to translate English into Russian or vice-versa. The answer is chosen via a one-in-five multiple choice selection, which is not the most accurate of tests, but it works quite well.

NO UNDERSTANDO

The confusing Russian alphabet is portrayed in authentic fashion on the screen, but a book called 'Russian in Three Months' is included to aid recognition. A complete on-line dictionary is also available from within the program, but it only details the words used in the program and no pronunciation is available in this section. It may seem a bit gimmicky but this system actually works. Within a short space of time I had learned at least ten new words and could take a good guess at most of the others – its longevity is a little limited, though. This is exactly the sort of software that should be released on CDTV, since undoubtedly the space consideration is what limits the vocabulary. Combined with the book, though, it is an excellent tutorial package.

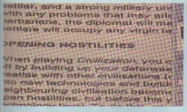
ADDRESS BOOK
Fairbrothers Inc, 5054 S. 22nd
Street, Arlington, Virginia 22206

FAIRBROTHERS INC. £TBA

You, too, can learn Russian with this simplistic package...

EASE OF USE	96%
VALUE FOR MONEY	74%
EFFECTIVENESS	95%
FLEXIBILITY	86%
INNOVATION	83%

OVERALL 87%



settler, and a strong military uni
with any problems that may aris
barbarians, the diplomat will ma
settlers will occupy any virgin te

OPENING HOSTILITIES

When playing *Civilization*, you c
ff by building up your defenses
reaties with other civilisations (c
nto new technologies and buildi
eighbouring civilisation become
pen hostilities, but before this y

As the image isn't scanned, the text quality is considerably superior to that of a conventional fax machine.

SUPRA FAXMODEM

Nick Veitch gets his fax right as he looks at Supra's new approach to data transference...

SLIMMER'S DISEASE

Without any definite figures to go on, it is still a fairly safe bet that a large percentage of the modems owned privately in this country have originated from the Supra corporation. They are a big name in comms, so it is not surprising to find that they are now introducing a whole new line in fax-modems.

Essentially, a fax machine is a modem with a scanner attached to it. The paper goes in, the image is scanned and simultaneously the data is transferred via telephone to another fax machine at the other end of the line. The data is transferred in more or less the same way as a modem at speeds of up to 9600 baud. Because the data is stored in an encoded fashion, though, it is impossible to just take an IFF file and download it over the phone. A fax modem is just a modem with a few customised fax chips connected – all the hardware linking it to the computer and to the phone line is identical to that used during normal operations.

DRIVER SOFTWARE

When operating in fax mode, the faxmodem behaves in a slightly different way and responds to different commands than a normal modem, so special driver software is required. There are a few programs around, but First Choice, who are importing the Supra equipment in to this country, are looking to bundle their units with *GP Fax*, an impressive-looking piece of software from Australia.

When recieving a fax, the software simply downloads the data and renders it as an IFF file which can either be displayed on screen or simply printed out. Sending data is even easier. Just convert a normal text file into a Fax file and send it, no paper required. Faxes sent this way actually turn out better than when using a normal fax machine, as there is no scanning process to degrade the quality of the text.

You can include standard IFF images in your faxes, but it is best to make them monochrome only as greyscales don't turn out too well. *GP Fax* will even allow you to customise covering sheets, automatically add your signature to the end of a file and even schedule the faxes to be sent to a group of numbers at a specified time.

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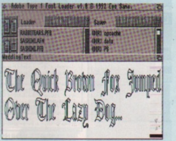
FLEXIBILITY	86%
INNOVATION	86%
OVERALL	**88%**

SAFARI FONTS

Nick Veitch goes on Safari as he gets to grips with an elephantine series of excellent fonts...



The Quick Brown Fox Jumped
Over The Lazy Dog...

Some of the fonts in the set are ornate typefaces which, whilst you don't use them everyday, often prove useful.

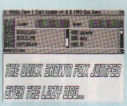
SCALEABLE FONTS

Scaleable fonts differ from the standard bitmap versions in that they are rendered to the screen resolution. Instead of a great file full of information about the individual pixels in each font, a scaleable font merely contains the mathematical definitions of the shape of each character. This may make the font files a lot bigger, but it does mean that you don't have to have a different file every time you want the font to appear at a different size – a scaleable font will be rendered as and when it is required.

Again, because the Amiga didn't start off with a standard of its own, so the early software that wanted to use them had to adopt their own. Gold Disk started using the Agfa standard Compugraphic fonts in their software, and soon enough, so did all the other DTP packages. When Workbench adopted scaleable fonts, Commodore also chose the Compugraphic standard, but in a slightly different format. The real pity is that most fonts are available in the Adobe standard on the Mac. Fortunately, Gold Disk have a conversion utility that will translate these fonts into a Compugraphic (or CG) format. There is a simililar utility available for users of *Pagestream*.

DESIGNER FONTS

On the Macintosh there are several font designing utilities, so a large number of fonts are available as Public Domain or Shareware. The fonts available in the *Safari* collection all come as Adobe Type 1 files so you will have to convert them before use.



THE QUICK BROWN FOX JUMPED
OVER THE LAZY DOG...

Some of the fonts are instantly recogniseable, but beware of boldly going where no copyright writ has gone before.

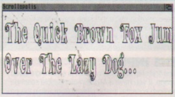
The Gold Disk *CG Update* program is provided on the disk if you don't have the latest versions of *Professional Draw* or *Professional Page*, so that once the fonts have been converted they will work with these programs. The conversion utility isn't bullet-proof, so you may have a bit of trouble with the more complicated files.

FONT-TASTIC VOYAGE

The fonts themselves are quite impressive. There are around 70 fonts in each collection of five disks, covering many different styles. A few of them are not particularly useful, like hieroglyphics and the alien font which are completely illegible, even if they do look quite nice. There are two excellent Star Trek fonts though, so now you can make your own scrolling credits and boldly go where no video caption machine has gone before.

The quality of the fonts is very impressive and far in advance of most of the Public Domain ones that are surfacing. Remember also that if you use these fonts commercially you will be held responsible for any copyright infringements, so it's best to get them from a reliable source and not some German pirate board.

If you are looking to expand your font library at a reasonable price, you couldn't do much better than taking a look through the sets offered by E.M. Compugraphic.



The Quick Brown Fox Jum
Over The Lazy Dog...

Supplied with the set is the Gold Disk *CG Update* program which will allow you to use the fonts with *ProPage*.

ADDRESS BOOK

EM ComputerGraphic, 8 Edith
Road, Clacton, Essex CO15 1JU
0255-431389

EM COMPUTER GRAPHIC £15

Quality fonts at a reasonable price...

EASE OF USE	76%
VALUE FOR MONEY	99%
EFFECTIVENESS	80%
FLEXIBILITY	86%
INNOVATION	80%
OVERALL	**84%**

migraph *ocr*

Always one for the easy life, Nick Veitch scans some software which could free you from hours of tedious typing...

TEXT WITHOUT TEARS

Does the thought of duplicated effort annoy you? Are you the sort of person who would rather spend two hours writing a program that solved simultaneous equations than spend two minutes working one out? You are? Then read on...

OCR, or Optical Character Recognition, is a process for converting printed type into computer readable ASCII text. Using a simple scanner, an image is built up from the printed text. The computer then tries to match character patterns to ones stored in a database. By analysing each character separately, words are built up and the text is then saved as a standard ASCII file

Migraph OCR is the latest development of a technology dating back to the late sixties. It is a tribute to those developments that such a system is now available which can run quite happily on an ordinary home computer – such as the Amiga – equipped with a fairly standard hand-scanner.

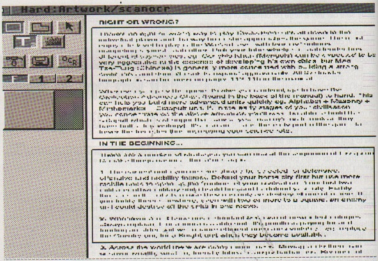
THE INPUT

The first step to a quality result is scanning a good image. If you have a *Migraph*-compatible scanner, you can scan the image directly from within the program. This doesn't make a great deal of difference because it's just as easy to use your custom scanning software to scan and then touch up the image before loading it in, but it makes sense that scanner control has been included in the software.

There are three important things to bear in mind when scanning the image. The first is a bit obvious – you must try and get the lines of text as close as possible to absolutely horizontal. If the lines are skewed so much that the beginning of one line starts at the same level as the end of the previous line it will be a nightmare for the program to work out what is going on. The next important consideration is that you scan at the right resolution. *Migraph OCR* works by analysing the shapes of the characters and it's not going to be able to do that if they are all only four pixels high. Finally, you should adjust the scanner settings to get a decent contrast – for instance, nice black letters, a nice white background, and a very low noise level. Of course, a lot of this will depend on your original printout.

SELECTION BOX

Don't worry if the text is arranged in columns, or even if there are graphics mixed in with it. You can select areas on the scan using a standard box drawing tool so it is relatively easy to bypass annoying things like headers and footers or logos on the page. The boxes can be sequenced, too, meaning that you can still process successive columns of text as a continuous document. Simply by putting boxes around the text and cropping out keylines and graphics, you can suck all the text off the page and leave the rest behind. The only thing to beware of are different font sizes and styles. *Migraph* will be confused if you have the same font in different sizes, so you'll have to crop out headlines and the like. Italic text can also cause a few worries, but it's best not to force the software to learn these characters as it just makes the range of acceptable characters that bit more fuzzy.



Once the image has been scanned, you can select areas of the image to process. Note that it is inadvisable to try and process mixed type styles at the same time, as this will muddle the dictionary and make it less reliable in the future.

THE LEARNING CURVE

Migraph OCR sets up dictionaries to deal with particular styles of fonts. This doesn't mean that you can't run a 12-point font through a 14-point dictionary, but it does mean that you should use different files for very different families of fonts, like Helvetica and Times. Having looked through the IFF and picked out the lines, words and individual characters, *Migraph* then tries to match them to what it expects to see. If you are still training your dictionary (which is advisable for the first 5000 words or so) then a requestor will appear asking for advice on certain characters. A small area of the scanned bitmap is also displayed to make it easier to establish the context of the word. If letters are touching in the scan then the software can confuse them both for a single character, but this error is easily corrected by typing in the two correct characters. Similarly, a whited-out area of scan may trick the software into thinking that there are actually two characters where originally there was only one.

CONCLUSION

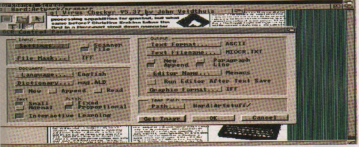
This software is astounding. Without even training it to recognise a font it seems to achieve at least a 95% success rate with even the ropiest of scans. The only real drawback is that it does consume rather a lot of memory. 2Mb is required for processing even small files, and remember that the scan has to be in memory at the same time. At a reasonable resolution of 200dpi an A4 page takes up a couple of megabytes. ⊛

WHY OCR? Optical Character Recognition was researched long ago as a method of marking items that could be read by a computer, to help automate stock-taking and accounts systems. Recently, though, the bar-code has taken over from OCR in a big way when it comes to marking goods in the warehouses and in the shops. The reason for this is that it is much simpler for a computer to recognise a simple system of lines than trying to work out characters.

There are still areas where OCR is important, though. If you have a cheque book you will have noticed the row of strange numbers along the bottom of each cheque, detailing the cheque number, bank code, and account number. The remarkable thing about this is not that the computer can read the marks, but that you can read them, too. Admittedly it is a strange-looking font, but bear in mind that the banks started using this system years ago and it still works okay for them (actually, banks use Magnetic Character Recognition, but it's almost the same thing).

The cheque book code is what is known as a raster-based OCR system. In this case, the program relies on a database of images which should exactly match the pixels scanned in. This meant that the system was quite fast, but also very expensive because all the characters had to be printed very precisely. The next step was to develop trainable OCR systems. If a character wasn't recognised the user could look at it and then tell the system what that character was. The pattern would then be added to the database so that it could be recognised again automatically at a later date.

The real breakthrough was Omnifont technology. Put simply, the database no longer contains bitmaps of the characters to be recognised but instead relies on a mathematical definition of the shape. Not only does this make it easier for the computer to take its best guess at unknown characters, but also means it isn't strictly limited to one particular font at one particular size.


Workbench Screen
Hard:Artwork/scanocr
Virus Checker V5.37 by John Veldthuis
OCR Control Panel
Input
Settings...
Scanner
File
File Mask...
Document
Language...
Dictionary...
New
Append
Read
Text
Small
Normal
Pitch
Fixed
Proportional
Interactive Learning
Output
Text Format...
Text Filename...
New
Append
Paragraph
Line
Editor Name...
Run Editor After Text Save
Graphic Format...
Temp Path
Path...
Get Image
OK
Cancel

File Mask... IFF

Language... English

Dictionary... mag.ALD

Text Format... ASCII

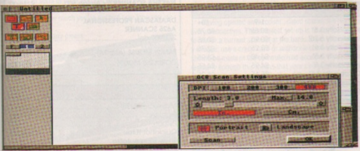
Text Filename... MIOCR.TXT

Editor Name... Menacs

Graphic Format... IFF

Path... Hard:Artstuff/

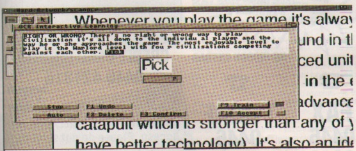
This is more or less the main control panel. Choose you preferences, name your dictionaries and get scanning.


Untitled
OCR Scan Settings
DPI: 100 200 300 400
Max.
In.
Cm.
Portrait
Landscape
Scan
OK

Length: 3.0

Max. 14.0

If you have a compatible scanner you may scan directly into the OCR program, but usually you'd want to touch-up the image first. Whatever you opt to do, there's no doubting the package's user-friendliness.


Hard:Artwork/scanocr
OCR Interactive Learning
Pick
P
Stop
Auto
F1 Undo
F2 Delete
F3 Confirm
F9 Train
F10 Accept

RIGHT OR WRONG? There's no right or wrong way to play Civilization it's all down to the individu al player and the way he or she approaches the game. The most enjoyable level to play is the Warlord level with fou r civilisations competing against each other. Pick

Whenever you play the game it's alway
und in t
ced unit
in the
advance
catapult which is stronger than any of y
have better technology). It's also an id

The learning phase allows you to correct mistakes and guide the user dictionary to better recognition in the future.

FOUR STEPS TO RECOGNITION

Working off a bitmap scan isn't that easy. The first thing the software has to do is work out where the lines of text are. Unless you have an astoundingly accurate scanning arm, the chances are that the lines aren't going to run perfectly horizontal. If the text is skewed too much or the spacing between lines is too small the software is going to have difficulty working out what is going on.

Having examined the lines, the next step is to slice them up into words and finally into characters. This process is a lot easier if the text has been printed using a fixed width (ie. non-proportional). If the characters are proportional and occasionally touch each other, there is going to be trouble.

The penultimate stage seems almost easy by comparison. All the software has to do now is run the image of each single character through the database and see what comes out. The Migraph program uses an interactive learning system which allows the user to correct and guide the software into making the right choices. Now just collate the text and save it out as a standard text file.

MIGRAPH
OCR

MIGRAPH

. . . *a t a g l a n c e*

* Integral scanner control * Text box sequencing * Auto-learning * User dictionaries * Supports any IFF image * Omnifont technology * Requires at least 2Mb

Migraph OCR is not yet available on its own in this country, but a version of it does come bundled with the Alfascan Plus hand-scanner, available from Gasteiner. If you would like to contact Migraph directly they are at: 32700 Pacific Highways., Suite 12, Federal Way, WA 98003, U.S.A.
Gasteiner are on 081 365 1151.

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INNOVATION	96%
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Swift 24X	24	£204.50	£370.00
124D	24	£104.50	£180.00
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Star LC24-200	24	£77.00	£230.00
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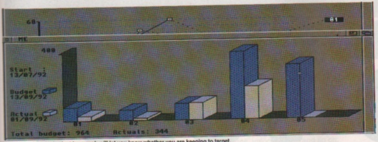


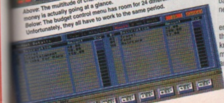
A quick look at the budget bar-graph will let you know whether you are keeping to target.

FUN WITH FUNDS

It's elusive, it talks, the love of it is the root of all evil, and it's the primary cause of the Earth's axial rotation. Money. It's a vital resource that everyone is concerned about preserving, but doing so can be a bit of a pain. What with standing orders, direct debits, credit cards, switch cards, cheque cards, and all sorts of other horrible ways for your money to disappear, it seems you need a degree in applied mathematics to work out how much you've got and how long you are likely to have it for.

There aren't many pieces of software you can buy for your Amiga that you can honestly claim will pay for themselves. *Personal Finance Manager Plus* is no exception to this rule, but at least you will be able to assess its value in real terms over the fiscal period and offset the cost as a legitimate expense – maybe. Almost everyone has preconceived ideas that every finance package looks like a spreadsheet with huge grids filled with unwieldy numbers, all of which are linked together in some complicated and arcane fashion. *PFM* is more like a computerised bank statement.

ntially, the whole program is simply a computer-controlled bank statement.



Above: The multitude of chart options allow you to check where your money is actually going at a glance.
Below: The budget control menu has room for 24 different items. Unfortunately, they all have to work to the same period.

Having opened an 'account', dated entries are made for every transaction. The simplest set-up is to use the account to mirror a current account at the bank. Every time you write a cheque, use a credit card or withdraw some cash, an entry should be made in the computerised account. If you do it regularly enough this means that your computerised bank statement is more up to date than the one at the bank.

Think about it. When you write a cheque it may take the recipient a week to enter it into the bank. Then, of course, the bank twiddle their thumbs for three days before they deduct the amount from your account. By this time you could already be fooled into thinking you are richer than you really are, because even though you have theoretically spent the money, it hasn't yet disappeared from your account. Your computerised statement will always be up to date (assuming that you have remembered everything).

BALANCING OUT

Well, okay, so far there's nothing that you couldn't have done just as easily with a pen and a piece of paper. But *PFM* goes further. If the balance at the bank doesn't match the balance on the screen you can select the auto-balance feature. This tries to reconcile the balance at the bank with all the information you have entered – usually by assuming that certain debits you have entered have not actually been cleared by the bank yet. This is an astoundingly useful function – you need never be surprised by a late-clearing cheque again.

The effect is achieved by deferring payments – ie. the entry is left in the account but is ghosted and not added to the balance figure. You can defer payments manually if you know that payment has not yet been made. You can also manually 'check' the entries, if you are absolutely sure they are accounted for. The auto balance can take a long time if you have too many unconfirmed entries.

STANDING AROUND

For regular standing orders, you can also create a list of the standing orders which are automatically debited from your account over a specific period. This is quite easy to set up, you just give the start and (if appropriate) finish dates and select to pay either monthly, annually, quarterly, every six months, or every four weeks (which is different to monthly). You can select a single payment option if it is a one-off in the distant future which you don't want to enter yet. The transactions will not be entered until the relevant date is reached. If you have more than one account (a secondary savings account, for example), you can set this up alongside your current account in the same workspace. The benefits of this are that, when you enter a transaction into any account (including standing orders), you can specify a destination account, too, saving the bother of making two entries when transferring money between accounts. You can have up to ten accounts side by side, which should be more than enough for anyone, but you could make good use of them if you have a number of store charge cards which have to be paid off regularly.

BUDGETS

Norman Lamont may have trouble with his, but you should be able to balance your spending with ease. Every transaction entered can have an optional code. The codes refer to budget allowances and, by tagging each transaction, you can work out how much you are spending on any particular group of expenses – food or computer games, for example. By specifying a target for each budget you can plot graphs showing the percentage distribution of your spending and bar graphs of how close to your targets you are getting. You could very swiftly find out how many drinks you were owed by your devious (and tight-fisted) Deputy Editor, for example. The budgets work across all the accounts, so if you buy some food on your credit card instead of through your current account it will still appear on your food budget.

The only possible way to make this program any better is if the banks would allow you to make direct modem links with their computer. You can't really claim that this package will pay for itself but at least it will show you where you are wasting your money. An excellent entry in the 'keep your hands off my stack' hall of fame. Stingy people everywhere should raid their tuppence collection for this one.

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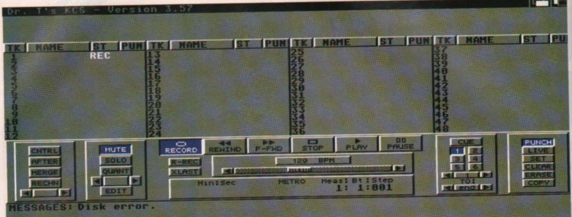
Dr. T's KCS - Version 3.57
TK
NAME
ST
PUN
REC
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CNTRL
AFTER
MERGE
RECHN
MUTE
SOLO
QUANT
EDIT
RECORD
REWIND
F-FWD
STOP
PLAY
PAUSE
R-REC
XLAST
120 BPM
Min:Sec
METRO
Meas: Bt: Step
1: 1:001
CUE
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2
3
4
5
6
TO:
end
PUNCH
LIVE
SET
CLEAR
ERASE
COPY

MESSAGES: Disk error.

KCS V3.57

Is Dr T's latest Amiga package really the best in the world?

Tony Horgan knows the score...

NEAT AND TIDY

Remember when you first got your Amiga? You thought it would sit neatly in the corner of the room, with a little box of disks sitting alongside. And so it did – but not for long. Before you knew it, you had stacks of disks appearing on any horizontal surface, all sorts of wires and boxes protruding from the computer, and a sea of cables connecting the ever-expanding mass of outboard gear. Well, here's your chance to put a bit of order back into the chaos, with a complete MIDI sequencing, editing, mixing and notation package from those chaps at Dr T's.

Rather than just one program, you get no less than four in the package: *KCS V3.5*, *Tiger*, *Automix* and *Quickscore*, each of which specialises in one particular field of MIDI music making. However, this is far more than just a bundle of MIDI sequencers. Once loaded, they come together as one, interacting with each other in total harmony. The idea is that you record your song with *KCS*, arrange and correct it with *Tiger*, mix it with *Automix*, and run it out to a printer with *Quickscore*. Anything you record in the sequencer is automatically written into the editor, and you're free to jump between all four programs whenever it suits, with no loading or saving of files to slow you down. It sounds great, but does it actually work?

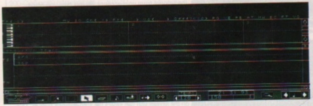
KCS

It all begins with *KCS* which acts as the nerve-centre of the system. On loading, you're presented with the reasurringly familiar tape deck-style transport controls: bold icons for record, play, rewind, fast-forward, stop and pause. With the record button already engaged, you're ready to jam.

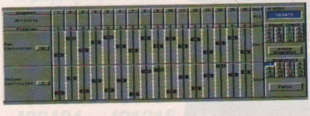
The moment you play a note on the keyboard, the sequencer starts recording. Initially you're given an almost endless track on which to record. Bash out a few chords, a beat, or whatever, and keep going until you come up with something you're happy with.

Now you can start building from your initial track. *KCS* automatically switches onto the next free track, demonstrating its own ideal of hassle-free recording. With the basic backbone laid down, you can then define those bars as a loop. Using the 'Mute new tracks' option, you can record your bassline or whatever over the top. The backing track you laid at the start will loop for as long as you like, while your overdubs are recorded on subsequent tracks. The track muting feature, combined with the loop, allows you to make multiple takes of your overdub, without needing to stop and go back to the start each time. When you're satisfied with any one of the takes, it's a simple matter of hitting the stop button, and deleting the previous rehearsal tracks.

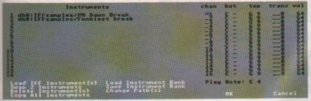
Unlike some sequencers which may give your performances a mechanical rigidity, due to low recording resolutions, *KCS* imposes no such restrictions with its maximum 384 ppqn (pulse per quarter note) storage rate. This does mean, however, that if your playing isn't water tight, you might need a helping hand from the quantisation functions. There are two ways you can go about quantising your work from *KCS*. The simplest method is to toggle the QUANT button on the control panel. Now anything you play is automatically



Once you've strung together a few sequences, you can use the graphic editing of *Tiger* to tidy things up.

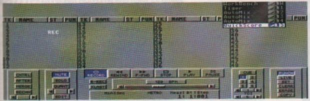

Channel
Activity
Program
Pan Controller
Volume Controller
Update
Panic

Automated mixdown becomes a reality with the *Automix* module.

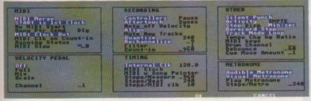


```
1 dh0:IFFsamples/PM Dawn Break
2 dh0:IFFsamples/Fonkiest break
```

Using internal samples is a fairly simple affair. Maybe a bit too simple...



Jumping from one program to another is no sweat – just select your new program from the menu.



```
MIDI Merge
START is 1st Clock
No MIDI Start
Song Ptr Send      Dly
MIDI Clock Out
MIDI Clk on Count-in
Running Status
MIDI Slow           _0

Controllers       Pause
Aftertouch        Sysex
Note off Velocity
Align
Mute New Tracks
Quantize            240
Rechannelize         _0
Filter               _1
Count-in           _960

Silent Punch
Activity       SMPTE
Step Disp    Min:sec
Rerecord Stop
Track Mode Loop
Tempo Chg by Ratio
MIDI keys
Drum Channel
Debounce             _50
Cue Move Amount      _1

Off
Full
Mix
Scale
Channel              _1

Internal Clk      120.0
MIDI Clock
MIDI w Song Pointer
Steps/Measure      _960
Steps/Beat          240
Steps/MIDI clk       10

Audible Metronome
Visual Metronome
Play Metronome
Steps/Metro        _240
```

The environment screen gives you yet another chance to customise the system to your requirements.

pulled into time before it's put on the current track. You can still vary the degree of quantisation, but auto-quantisation cannot be undone. The alternative is to use the numeric editor.

Up to now, you haven't been able to see what you've played. The numeric editor gives you the chance to examine and correct your music in detail. A screenful of letters and numbers isn't the most welcoming sight when you're halfway through a virtuoso performance, but it soon becomes a lot clearer.

Using the vertical slider to move up and down the current track, you can peruse and alter the channel numbers, note and velocity values, and their order in the sequence. Changing a single parameter (the duration of a note, for example), is just a matter of clicking on the appropriate value, and entering a new one. If you want to get into some heavier editing, you can select a whole range of notes, and perform blanket transpositions, velocity shifts and so on.

The Amiga's sampling abilities are one of its strongest features in my book. Unfortunately, partly because a lot of Amiga sequencers start out on the Atari ST, sample support has been pretty poor in the past. *KCS* does accomodate Amiga samples, but it seems an afterthought.

Once loaded, samples are assigned a MIDI channel, and treated as if they were triggered from an external sampler. This uses up MIDI channels, but keeps things simple. Unfortunately, it's all rather too simple at times. An extra sample editor module would have been handy, and it's extremely frustrating in its insistance that all samples should be in IFF format. If you've got loads of raw samples, you'll have to convert them to IFF before you can use them.

There are also options to synchronise your sequences with the Fostex R8 tape machine, and a choice of using the Amiga's internal clock, a MIDI clock, or song pointer messages.

TIGER

So far we've seen nothing of the standard piano-roll editing system. This is where *Tiger* comes in. By loading it directly after *KCS*, you can jump from one to the other via a neat menu at the top right of the screen, which lists any other programs you may have running at the time. It's a lot easier than pulling screens up and down to get from one program to the next. Unlike *KCS*, *Tiger* hasn't undergone the Workbench 2-style graphic makeover. The minute text, and far-from-bold windows take a bit of getting used to, especially after the neat and clear style of *KCS*.

The screen is occupied by two main windows. The top window shows the note data, depicted in the usual piano-roll style, with note lengths indicated by horizontal bars, and velocities shown as vertical bars. The bottom window is used to display and edit controller values.

A row of icons along the bottom of the screen are used to change the function of the left mouse button. Click on the 'select' icon, and you can activate any group of notes, which then become the subject of any operations you perform, such as quantisation, pitch changes and so on. A more direct approach may be to select the specific function you want from the icon strip. Click on the 'edit duration' icon, and you can then alter any note's duration with the mouse. The same system is used for velocity editing, so once you've mastered one, the other will come easily.

Beneath this is the controller window. This relates directly to the note data in the window above. From here you can draw smooth changes in any controller you like. As with the track window, you can edit at just about any resolution, using the zoom function to move in and out. The advantage of this is that you can come up with incredibly smooth changes in pan, volume and so on.

The step editor works well enough, but could be easier to use. As with the rest of the package, *Tiger* is very powerful, but it can be fiddly to use.

QUICKSCORE

With your masterpiece in the can, you might want to run it out to a printer in proper music notation form. This is a breeze with *Quickscore*. It's really nothing more than a matter of hitting the 'print' option, and watching it score your whole track for you. There are a few options to control the density of notes to staves, but that's about it. Quick and easy, just as it should be.

CONCLUSION

While the package has its faults, the good far outweighs the bad. The often confusing array of features is one of its best points. Any one of the programs on its own would be fairly impressive, but when they all link up together, they really come into their element.

Because each module specialises in its particular field, you're not short-changed with a half-baked graphic editor, or a token score printer. The inclusion of *Automix* brings the world of automated mixing to the masses. For a change, the programmers have made excellent use of the Amiga's superior hardware. You won't find a more powerful, complete MIDI sequencing package anywhere – on any machine.

CU AMIGA
TOP RATED

AUTOMIX

Of all the modules that make up the package, *Automix* rates highest on the 'Goshometer'. You can simultaneously run as many Automixes as you've got memory for. Each one gives you two banks of sliders, assigned to sixteen MIDI channels. The top bank could be assigned to control volume, while the bottom could control pan for example. Now, when you play back your sequence, all your movements on the mixing desk are recorded along with the sequence data. If you're happy with your mix, then fine: just replay it out to your mastering machine. If not, just as you've edited your note data in the sequencer, you can go back and re-do your fades, pans and so on until you're satisfied.

Each bank of faders can be assigned to any MIDI controller, and can even control flying faders on MIDI mixing desks. Let's say you've sorted out the volume and pan mixing, but want to add another controller to the mixdown. All you do is load up another *Automix*, and assign its banks to the appropriate controllers. You can then play back the sequence once more, while the first is replaying your initial mix automatically.

There's no need to stick bits of masking tape over the screen to remind you what's on what track. There's provision at the top of the screen for you to name each slider. You also get small activity meters to let you know what's happening and when.

KCS

. . . a t a g l a n c e

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FLEXIBILITY	90%
INNOVATION	96%
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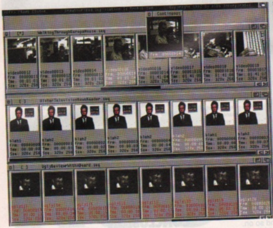
Fred

Art Department *Professional* is back and, as John Kennedy finds, this time it has brought a friend...


Continuous
WalkingThroughEuropaHouse.seq
UlsterTelevisionNewsReader.seq
UglyReviewerWithABeard.seq

Shown here are a series of sequences, broken down into smaller pictures. In addition, several sequences can be held at once.

OPENING DOORS

Ask anyone which is the best Image Processing software on the Amiga and they'll probably say '*Art Department Professional* (also known as *ADPro*) from ASDG'.

Simply put, *ADPro* is one of the best Image Processing programs available – on any computer. It was last reviewed in the March issue of CU, and the reason it's here again is because of the latest addition: *Fred* – the Frame Editor.

With *Fred*, *ADPro* is suddenly a very attractive proposition for the Amiga animation fraternity. In the old days, if you wanted to process more than one frame you would have to load them in one at a time and process them individually. To stop yourself going mad you may have written an ARexx program to load each frame in, but you'd always have the problem of the need for standard file names and a sensible way of getting your ARexx program to generate these names. ASDG have recognised this need with the latest *ADPro* upgrade, and have even given it the catchy name of *Fred*. To use it, you'll still need to be able to program (at least a little) in ARexx but, at the very least, the generation of file names will now be handled automatically.

SEQUENCES

Fred works on 'sequences' of images, displayed on-screen by miniature boxes representing individual frames. The images are loaded individually or in ranges in the same way that *DPaint* can, but at the present, ANIM files are not supported. ANIM files must be saved as individual frames first – not an entirely unreasonable proposition.

You are allowed to open more than one sequence at a time, and individual frames can be cut, copied and pasted. If you have the time, you can ask *Fred* to make a 'stamp' for each or all the frames, which causes a tiny version of the full-frame image to be displayed for each frame. The stamp is just big enough to recognize on *Fred*'s hi-res interlaced screen, and permits a cute animation preview option.

EXTRAS The latest version of *ADPro* has a few little extras. *ADPro* can now cache all its loaders, savers and operators which means it can run on floppy-based systems. Ideal for masochists everywhere.

ZAP will alter the IFF-files which can cause problems with *ProPage V2*, altering the rogue 'DPI' chunk.

Finally, there is a suite of programs which allow the splitting of large files and supports Amiga, PC and Mac formats. I've had to resort to all sorts of horrendous solutions in the past (null modem cables, DIY archive programs) so these programs are well over due.

Incidentally, an interesting aside on screen resolutions is where one of *Fred*'s pop-down menus allows you to select the number of bitplanes from four to eight. At the moment, Amiga hardware will only support four bitplanes in Hi-Res, so it looks as though the next generation Amigas will be letting us use up to 256-colours. Yummy!

Once the sequence has been defined, you are free to pull on the rubber gloves and perform some operations on it. Doctor *Fred* has a few tricks up his sleeve himself – you can alter timing information, mix two sequences and incorporate an 'alpha channel'. Alpha channels are used with 24/32-bit video boards to allow images to be overlaid on top or behind the main graphics display. Never has animation editing been so easy!

AREXX REARS ITS HEAD

The main purpose of *Fred* is to allow image processing to take place on the individual frames, and that's just what the option 'invoke ARexx' does. Before the processing starts you can define a list of ARexx scripts, and these scripts are executed for each selected frame. These scripts talk to the copy of *ADPro* which you've had running in the background, and specify which operations need to be done. *ADPro* grinds away doing all the hard work, and then returns control to *Fred* who proceeds to the next frame. It all takes time, but the beauty of such an automatic system is that it isn't your time that's being wasted – you could be doing something else in the meantime.

EXAMPLE SESSION

Let's say I have a sequence of 320x256, 16-colour frames created with *VIDI* which I want to shrink and turn into an animation. I could load them all into *ADPro* (or *DPaint*) and halve them that way, but chances are I would make a mistake or simply go bonkers with the boredom and bin the entire project.

A better way is to use *Fred*. First of all, I need to get *ADPro* running. Then I return to the Workbench and run *Fred*. Now I select 'New Sequence' from *Fred*'s Project Menu, and start to insert the frames. As my frames are cunningly called 'FRAME000', 'FRAME001' and so on (up to 'FRAME200'), I can load them all in one go as a range. If I had the time, I'd ask *Fred* to make a stamp for each one so I could recognize it.

Now I need an ARexx script that communicates with *ADPro*, asking it to shrink each frame. Well, here's one I prepared earlier:

```
/* John's ARexx macro to provide quarter screen
animations! */
ADDRESS "ADPro"/* Talk to ADPro */
OPERATOR HALVE/* Select 'Halving' operator */
EXECUTE /* Do it */
line = arg(1) /* create new filename from old */
parse var line number "" name ""
parse var name "/" name
name = "dh0:fred/new"name SFORMAT "IFF
SAVE name "IMAGE" "DISPLAY" 200 /* Save the
image! */
EXIT/* The end */
```

Most frame operations will require equally simple ARexx programs, because *ADPro* does all the hard work – all you have to work out is what to tell it, for which the the ARexx documentation in *ADPro*'s manual is more than adequate. Now I select the frames to shrink, by pressing the Amiga-P keys to invoke the macro. After a while, the quarter-sized animations are all saved on my hard disk, ready for me to load in *DPaint* and turn into an animation. Of course, resizing isn't all that's possible – anything *ADPro* can do, *Fred* can, too.

CONCLUSION

Anyone who uses *ADPro* will be surprised at how badly they need *Fred*. After seeing the problems thrown up attempting similar processing on the PC and Mac, it's a testament to the Amiga's superlative multi-tasking environment that *Fred* can even exist, never mind work so well. If you are a regular user of *ADPro*, you should have the 2Mb+ memory (and realistically a hard disk) required to use *Fred*. You should also realise that it is an essential upgrade.

FRED

. . . at a glance

- ARexx support • Automatic frame numbering
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- Screen previews • 8 bitplane support •

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kindwords 3.0

Is it third time lucky for The Disc Company's notorious word processor? Nick Veitch spells it out...

IN SEARCH OF...

Everyone is looking for something different. Some people want a word processor with lots of dictionaries and thesauri; others want to import graphics; whilst even more users think it vitally important to load and save in about seventy different file formats. It goes without saying that it should be incredibly fast and easy to use. It's not surprising that there is such a diversity in the word-pro field today. Nobody could produce a program that is all things to everyone. But still they try. There has got to be at least one word-pro designed specifically for any one text task you can think of. A large number, though, are devoted to what is now known as page publishing – a sort of mini-DTP. *Kindwords 3.0* is one such program.

Kindwords has had a bit of a chequered history. The original version was ritually torn apart in every review it appeared in. This latest version is completely different as there is little remaining from the original apart from the name. In fact, *Kindwords 3.0* is a lot more like its competition than either of it's predecessors. In fact, it is one of the competition – a reworking on the text engine of Digita's *Wordworth*.

TEXT HANDLING

Using standard fonts on a four-colour screen, *Kindwords* still seems to lag behind if you get up a good head of speed when typing. This is more than a bit annoying and wouldn't happen on a dedicated text cruncher like *Protext* or *Word Perfect*. As you would expect from a package with this sort of bent there are a lot of text formatting options. Apart from the ruler and tabs set-up now almost de rigeur on any page-publisher, there are also a whole host of linespacing and justification options. If presentation is important to you then these options should provide you with more than enough to fiddle with. You are not going to find more typography options anywhere else with the exception of a full-blown DTP package.

Headers and Footers options are available – as are automatic insertion features. Many programs read the system date and insert it as an option but I haven't seen many which have the option to automatically update the time or date when it is printed out. This means you could have a standard letterhead including the date and all letters would be dated (and timed, if you are very pernickety) correctly when you print them. In fact, there is a worrying amount of clockwatching going on in the program. The document information screen contains, amongst other things, the total amount of time worked on the document, and the time spent during this particular edit. This is quite useful if you are charging for work by the hour as you have a record of exactly how long you have spent on some text.

PICTURE PERFECT

The ability to import bitmapped pictures into text dramatically enhances the image of your document and of your word-pro. *Kindwords* will accept any standard Amiga IFF (including HAM) image of any size. Having selected the graphic to place, a requestor will pop up with textflow and mapping options. You can select colour zero to be transparent, and this is useful if you are trying to run text around an irregular object. If you are using a HAM graphic, understandably it will take rather a long time to create a screen image, which of course is only going to be in 16-colours anyway – it's probably a good idea to use something like *Pixmate* or *ADPro* to convert the image down before importing it. The text flow options are fairly comprehensive, and the screen does operate on a dynamic refresh if you move the picture about. Picture handling on the whole is quite good, but the lack of a cropping option means you are going to have to spend some time with *DPaint* or an image processor to get them right.

THRILLS AND FRILLS

The ability to write on a 16-colour screen makes a difference when you are trying to work out the detail in a picture. Unfortunately it also means the refresh time is about four times longer. The thesaurus is by far the best on any word pro so far, though perhaps the way in which words are looked up could be made a little more intuitive.

KINDWORDS 3.0

. . . at a glance

*Bitmap graphic support * Dictionary * Thesaurus * Multiple documents * Advanced document layout * Text runaround * Automatic date and time.

Expert Draw costs £69.95, and is available from Genisoft, Unit 3, Poyle 14, Newlands Road, Colnbrook, Slough, SL3 0DX. Tel 0753 686000.

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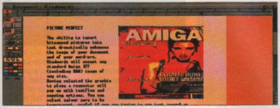
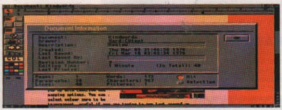
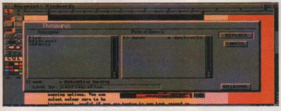


Text running around a picture, even justified on a straight line, can make a document look considerably more interesting.



A complete record of each document is kept. Invaluable if you have a memory as good as, er... mine.



The thesaurus is easily the best of any of the word processors, if not the easiest to use.

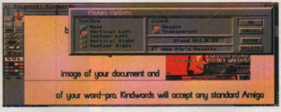


image of your document and

of your word-pro. Kindwords will accept any standard Amiga

Inset pictures can be given a transparent colour 0 for irregular runarounds.

imagine V2

John Kennedy is almost rendered speechless by the latest version of an old Amiga favourite...

Above: Against a 'Scenery'-generated landscape, a rendered P51 plane banks away from the camera. Picture this animated in real-time, with 24-bit graphics...

Right: Even traditional ray-traced mirrored balls on a chequed floor look better when rendered with *Imagine*.

GRAPHICALLY SPEAKING

No one will argue that graphics are what makes the Amiga special, and nothing looks better than a really good ray-traced image. Ever since the near-accidental HAM mode was discovered by programmers, realistic pictures produced by rendering programs have boosted Amiga sales and filled magazine pages. Over the years, such pictures have become more and more realistic and, with the advent of 24-bit video boards, the Amiga can now create photo-realistic works of art – as long as you have the right software.

Silver was one of the first ray-tracing programs available (although the term 'ray-tracing' is a bit misleading as we shall see) and has been responsible for creating some remarkable pictures. It evolved into *Imagine* which has now been updated to version 2. Once again you're going to have to catch your breath.

HARDWARE

To run *Imagine*, you will need an expanded machine. As can be expected, your RAM limit must start at 2-3Mb, and a hard drive is all but essential. I have been using *Imagine* on a 2Mb Fast RAM, 1Mb Chip RAM A500+ with a GVP hard drive and, to be honest, anything less than this wouldn't really be enough. You could possibly survive on floppies, but if you are going to buy a software package at this price you'd be daft not to buy a hard drive first.

To put together either a single image or an epic animation, you will need to master the many editing screens *Imagine* provides. Most screens supply the traditional tri-view windows (top, front, right), along with a pretty 3D wire-frame. The Form and Detail Editor are where your objects will be created – the Form editor is ideal for organic or symmetrical objects, the Detail editor for tweaking and assigning physical attributes, such as colour, texture or reflectivity.

The Cycle editor is used to control the various positions and shapes an object may have if it is moving – a bicycle's wheels spin, a person's legs walk, and so on. If your object is static, there is no need to use this editor. Additionally, the Stage editor provides control over the composition of the various objects, and the positioning of the light sources and imaginary camera. It's here where objects can be linked to 'paths' to describe their movements, and a miniature wire-frame animation can be created to fine tune everything. Paths can even be assigned to paths, to allow complex movements to be choreographed quickly and easily.

ACTION-PACKED

From the Stage editor, the next step is the Action editor. This is the first editor not to feature the tri-view display and wire-frame model. Instead, each element included at the Staging process is available for editing, their attributes varied over the length of the animation if need be. Various special effects – such as explosions and rotations – can be applied to objects. These effects are preset, but Impulse will update registered owners with more as they come along. The supplied list will keep all but the most demanding Harry Harryhausen happy for a good few animations.

An extra element called Globals is included in the Action editor, and from here the overall 'look and feel' of your universe can be created. A global backdrop file will provide instant detail to your image. For example, in these pictures I have made use of Brett Casebolt's excellent *Scenery* program to provide sky, land and sea. The same backdrop, or another if you so wish, can be used to provide reflections in certain objects. If your picture is set in an evening setting, you might like to make use of an automatic star generation feature, or simply make the sky blue and the grass green. The ability to animate global brushes opens up the world of backdrop animation – remember the car sequences in films where actors pretend to be driving with a fake roadway behind them?

Finally, you will reach the Project menu where you can select the resolution of your finished picture and also provide a sensible means of storing and organizing your objects.

ANIMATION

Unfortunately, one of *Imagine*'s best features cannot be shown here – the animation facilities. It's only when you spend a day creating a static picture of a cow that you realise that it's animation which makes the difference between actually photographing a cow and rendering one. With animation you can create a new kind of art form – a film – and one in which the normal laws of physics simply need not apply. Now your cow can mutate into a burger and spin off into the setting sun, as azure waves crash on a wooden beach. Salvidor Dali would have loved it...

HOME TV?

It's not an exaggeration to say that with a properly-equipped Amiga you could make a broadcast television-standard animation with *Imagine*. A whizzing company logo for example – or even a short cartoon or film. With a genlock and some good live video footage you could certainly produce something better than most pop videos. The tools provided by Imagine include powerful 'inbetweening' and pre-determined path tracking. The animation editors provide all the facilities you need for controlling your 'actors' and also allow the special effects.

Imagine also supports both brush and texture maps, and deals with both in a reliable and sensible way. Brush maps will allow any standard IFF image to appear directly in a picture – for example, a previously digitised photograph could be placed in a rendered picture frame – to provide that final touch of realism. Texture maps will give an object some 'bumps'. Depending on the map, anything from the skin of an orange to a stormy ocean can be simulated. In fact, like brush maps, up to four texture maps may be applied to any one object to produce some incredible results. Animating the maps can provide convincing effects, such as waves.

SPEEDY

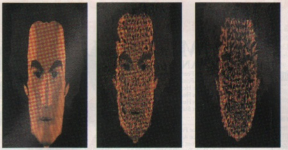
Rendering times are very respectable, but that still means that a good picture could take an hour to produce on an unaccelerated Amiga. If you want to generate animations, you will need an '020, '030 or even an '040. Leaving the Amiga to generate pictures overnight is all very well, but a minute of animation could still take a month. Life is too short. To speed up rendering times whilst in the editing stage, you can perform a so-called 'quickrender', which really means a single frame render without any globals. If you select a sensible resolution (quarter screen HAM) you can check out your work within a minute or so.

A rendering program exists to achieve a single goal: pictures. If the pictures aren't up to scratch, all the effort put into creating the objects has been wasted. Simply put, Imagine produces some of the best images I've yet seen. I remember the first time I used *Sculpt 3D*, and the excitement at creating my own universe on screen. After many years of exposure to Amiga graphics, I thought I had lost that feeling. *Imagine* brought it all back.

As you would expect, most Amiga graphics modes are supported. Those that aren't won't be missed, and with the support of both 12-bit and 24-bit files in various formats, creation of a custom format is child's play. Direct support for Impulse's own *Firecracker* 24-bit board and the *DCTV* ensure top quality images can be seen as quickly as possible.

DOCUMENTATION

Imagine's instruction manual is amazing. The first impressions I had varied from 'inspirational' to 'abysmal'. After using it for a week, my conclusion must tend towards the lower end of the quality scale. Rather than a simple description of features and some tutorials, Impulse's work – which could easily be renamed 'Zen And Art Of Image Rendering' – is a complete week of patronising evening courses. If you want to find out about a specific feature in a hurry, forget it: you simply must work through the entire book in order. If you can't remember something, you'll have to work through it all again.



Above: Take one Beethoven head object, one special effect and – Bang! – a busted bust.

Right: Advertising is an obvious arena for computer-generated pictures.

So much vital information is hidden away between large chunks of the author's personal view of life, the universe and everything that you will need a great deal of patience to stop yourself throwing the entire box in the bin. Of course, Impulse are to be applauded for trying something different, but such a complicated package needs a thorough reference manual. Indeed, with such a piece of software, the documentation forms an integral part of the package, and *Imagine V2* suffers badly. Impulse must include a reference guide, and preferably an instructional video cassette, perhaps dealing with the excellent example objects supplied. If the software wasn't so good, *Imagine* could expect a poor overall score from me in the end panel of this review.

Whilst I harp on about bad points, I find it astonishing that ARexx is not supported. With ARexx, the possibilities opened up would be immense: for example, a script for generating frames and feeding them through *AdPro* and a third party video-board to a frame-by-frame video recorder would have been remarkable easy to write.

Above: After spending so much time creating this cow, you have to ask wouldn't it be simpler to photograph one?

Below: Within this animation, the boat moves forward, pitching from side to side as the landscape moves past.

CONCLUSION

If you have an Amiga with the necessary memory and a hard drive, but don't yet own an accelerator or a display card (24-bit or *DCTV*), I recommend that you think carefully before getting *Imagine* – you'll soon be hankering after both so much that you'll be willing to sell family members into slavery. The static pictures that *Imagine* produces are so stunning that the thought of high-quality animations is almost too much to bear. The software is reliable, and as you get to know it properly, it will be hard not to set it rendering every time you use your Amiga.

Imagine is probably the best rendering program available for the Amiga at present – and, let's face it, there is certainly a great deal of competition out there. On an accelerated Amiga with 24-bit graphics, the results can equal or better those on any other computer at any other price, but even on a moderately expanded A500/600, your Imagination will be your only limit. It may indeed be a little dear, but it's worth it...

IMAGINE V2

...at a glance

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Hama 290

What's the difference between a £99 genlock and one costing hundreds of pounds? Chris Jenkins finds out...

Genlock 290
hama

Tranny - More than just a genlock, the HAMA 290 incorporates many of the fade and wipe features you would find in a professional video studio setup.

CHEAP BUT CHEERFUL?

A genlock is almost obligatory for any serious video production job using the Amiga. By synchronising the screen-scanning rates of the Amiga and your video source, and allowing the video image to show through the Amiga's transparent background colour, the genlock lets you superimpose Amiga graphics over live video pictures, to produce effects such as captions, subtitles, and wipes. So, if all genlocks do very much the same job, why is it that they range in price from the £99 Minigen to models like the £749 Hama 290? Well, for a start, the Hama 290 is more than just a genlock. It's more of a video production centre, halfway between a genlock and the sort of video mixer which might cost you around £2000 - the 290 is also S-video compatible.

S-video (or high-band video) is the preferred format for serious domestic and semi-pro video makers. While profesional TV broadcasts pictures boast something like 700 lines of resolution, ordinary domestic video gear (in the VHS,VHS-C Video8 formats) offer a mere 250 lines. S-video gear (S-VHS, SVHS-C or Hi8 equipment) offers in the region of 400 lines. This may not be professional standard, but it's a hell of a lot better than the standard fare. The best thing about the Hama 290 is that, unlike cheaper devices, it handles S-video signals with no appreciable signal degradation, and that should be crucial in your choice of genlock.

You pay a heavy price for this quality, though, so the obvious conclusion is that it's worth considering the 290 if you use S-video equipment - and it's probably not worth spending this much money if you don't.

FEATURES

What you get for your wad of dosh is a neat table-top unit which is sturdily built and styled to fit in with Hama's other audio and video products (the German company is one of the world's biggest manufacturers of video gear, and can set you up with anything from a camcorder bag to a tripod). The genlock has a trailing ribbon cable which connects to the Amiga's RGB port, and an output socket for an RGB monitor. Power is drawn from the Amiga, or from an external 12V supply which is provided. There are also composite video and S-video inputs and outputs, and a special output designed to connect to a video digitiser cartridge. We won't go into all the connection details here, since everyone's video set-up will be different - everything is explained in the brief 10-page English section of the manual.

Once you have set up your video sources, recorders, Amiga with video software, and genlock, the fun begins. On the front panel of the genlock are six control knobs, along with three buttons and two faders. Small LEDs indicate the status of the controls. The Monitor Select button lets you choose whether your monitor displays the Amiga graphics or the mixed Amiga/Video image. With the 'Genlock' LED lit, you can fade the Amiga and Video images up and down independently using the jet-control style faders. Have fun doing this for a few hours before you explore the other controls! The Key-Convert switch swaps between background and foreground keying modes - in other words, the Amiga graphics can appear over the video image, or become a window through which the video 0 image shows.

SIGNALS

The three knobs - Chroma, Contrast and Luminance - work like the picture controls on your TV, enhancing the colour level, dynamic range and brightness of the output. There are also separate level controls for the Red, Green and Blue components of the video signal - these are useful for correcting the colour balance of pictures or for separating the signals for use with a digitiser. When using a digitiser, such as *DigiView Gold*, the 290 is connected to via a joystick socket to the Amiga, which controls the colour-switching process. Anyone into serious video production may already have these facilities on other units, so it's a pity that they bump up the price of the unit. Still, it's handy to have all these functions on one unit. The Bypass button, lets you display an unprocessed video picture, for comparison with the version output after processing by the 290. The 290 incorporates a 'blackburst generator' which means that recording of the output signal can continue even if there is no video input signal. Many genlocks, such as some Rendale models, don't allow this. Another of the 290's incidental functions lies in conve rting S-video input signals into RGB outputs, which can be displayed on a TV with the increasingly common Scart connector. You could easily pay £100 for a box to do this job alone.

Of course, what you can do with the 290 depends very much on what software you use. ZVP's *Video Studio* is the ideal choice, but *Deluxe Paint* or one of the many other graphics, animation or video captioning packages available for the Amiga will work equally well. The 290 is supplied with a demo version of Hama's own titling software, *Easy Effects*. This isn't a very ambitious software package, offering 8-colour titles with just one font in two sizes, one graphic page with 10 lines of text, and vertical or horizontal scrolli ng. More impressive 'Disk-Magazines' are available in Germany, and will in time be release by Hama's UK division.

CONCLUSION

The Hama 290 genlock is certainly one of the most impressive such items seen in the domestic market, and this is reflected in its price. Put together one of these, S-video equipment and something like ZVP's *Video Studio*, and you'll have a cracking production system which will offer the best quality available below the megabucks range.

HAMA 290

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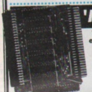

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INCLUDES 12 MONTHS ON-SITE WARRANTY, 'DELUXE PAINT' & EXCITING GAME TITLE!

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A600 with 120Mb Hard Disk	£ 699.99	

– Please note that the hard disk installation is not covered by on-site warranty –

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UPGRADE YOUR NEW A600 TO 2Mb WITH THIS SIMPLE PLUG-IN MEMORY UPGRADE!

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- ☆ RAM Enable / Disable Switch
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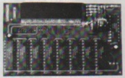

NEW! A500 ROM SWITCHER

SWITCHING BETWEEN VERSIONS OF KICKSTART ON YOUR A500 IS EASY WITH OUR NEW ROM SWITCHER!

You can improve software compatibility on your A500 Plus! By fitting our ROM switcher, you can alternate between the Kickstart 2 already resident and another version of Kickstart ROM chip, giving you the freedom of choice. Fitting is very simple indeed, and requires *no soldering* or special technical knowledge. Fitting allows two methods of switching; either by keyboard reset, or by an external toggle switch. **N.B. Kickstart ROM not supplied. A500 Revision 5A boards will require circuit modification.**

ONLY £24.95

Kickstart 1.3 ROM supplied separately	only £29.95
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High performance trackball, directly compatible to any Amiga or Atari ST. Plugs into mouse or joystick port. Super-smooth and accurate - you probably won't want to use a mouse again after using this Trackball ! Full one-handed control. Top quality opto-mechanical design, giving high speed and accuracy every time. No driver software needed !

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Genuine Commodore Amiga A500 type replacement Power Supply Unit. Good quality 'switch mode' type. Super low price!

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Amiga 500 Service Exchange Power Supply .... £ 24.95

STEREO SOUND SAMPLER

Offering full compatibility with almost any Amiga audio digitiser package, our Sound Sampler features excellent circuitry, yielding professional results. The main A/D converter gives a digitising resolution of up to 50KHz, with a fast slew rate. Two phono sockets are provided for stereo line input, plus an option for microphone. Adjustable gain is achieved with built-in control knob. Complete with public domain disk containing sound sampling applications / utilities.

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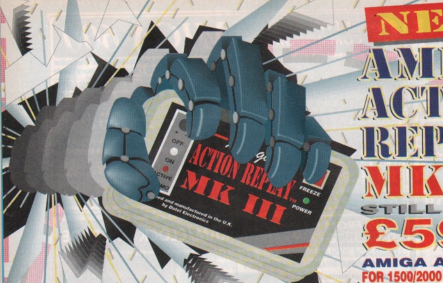
- Advanced Paper Parking
- Electronic Dip Switches
- 10 Resident LQ fonts
- Includes Colour Ribbon

ONLY £269.99

Star LC 200 9-Pin Colour, 4 fonts, 180/45cps	£ 199.99
Star LC 24-20 24-Pin, 4 fonts, 180/60cps	£ 209.99
Automatic Sheet Feeder for 10" LC printers (pls.state model)	£ 64.95
Star XB24-200 COLOUR 24-pin, 80 col. power printer	£ 369.00
Star XB24-250 132 column version of XB24-200	£ 439.99

Citizen Swift-24E including COLOUR kit	£ 299.99
Olivetti JP-150 Inkjet good quality - exceptional value	£ 249.99
Olivetti JP-350 Inkjet excellent high speed 300dpi printer	£ 349.99
Hewlett-Packard Deskjet 500	£ 359.00
Hewlett-Packard Deskjet 500C (Colour)	£ 529.00
Citizen Projet Inkjet Printer	£ 399.99
Epson LX400 budget 10" carriage 9-pin 180/25cps	£ 139.00
Epson LQ100 24-pin 180/60cps, 8k buffer	£ 205.00
Panasonic KXP1124i uprated 24-pin model 300/100cps	£ 279.00
Panasonic KXP1123 good value 24-pin model	£ 215.00



NEW

AMIGA ACTION REPLAY MK III

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£59.99

AMIGA A500/500+

FOR 1500/2000 VERSION £69.99

THE WORLDS MOST POWERFUL FREEZER-UTILITY CARTRIDGE

JUST LOOK AT THE UNMATCHED RANGE OF FEATURES

- **SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK**
Special compacting techniques enable up to 3 programs to fit on one disk. Now saves directly to disk as Amiga Dos - reloads independently of the cartridge - even transfer to hard drive! Works with up to 2 Megs of Ram - even 1 Meg Chip Mem (Fatter Agnus).

NEW **SUPER POWERFUL TRAINER MODE -**
now with DEEP trainer. Even better than before - allows you to generate more or even infinite lives, fuel, ammo. Perfect as a Trainer Mode to get you past that "impossible" level. Easy to use.

- **IMPROVED SPRITE EDITOR**
The full Sprite Editor allows you to view/modify the whole sprite set including any "attached" sprites. PLUS A RANGE OF IMPROVED FEATURES.

- **VIRUS DETECTION**
Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

NEW **BURST NIBBLER.**
Now this super disk copier program is built into Action Replay Mk III. Just imagine a superfast, efficient disk copier program at the press of a key - no more waiting.

- **SAVE PICTURES AND MUSIC TO DISK**
Pictures and sound samples can be saved to disk. Files are saved directly in IFF format suitable for use with all the major graphic and music packages. Samples are displayed as screen waveform.

NEW **PAL or NTSC MODES SELECTABLE -**
Useful for removing ugly borders when using NTSC software. (Works only with newer Agnus chips).

- **SLOW MOTION MODE**
Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

NEW **MANY MORE INSTANT CLI COMMANDS -**
like Rename, Relabel, Copy, etc.

- **RESTART THE PROGRAM**
Simply press a key and the program will continue where you left off.

- **FULL STATUS REPORTING**
At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

- **POWERFUL PICTURE EDITOR**
Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!

NEW **JOYSTICK HANDLER -**
allows the user to select Joystick instead of Keypresses - very useful for many keyboard programs.

- **MUSIC SOUND TRACKER**
With Sound Tracker you can find the complete music in programs , demos,etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!

- **AUTOFIRE MANAGER**
From the Action Replay III preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

NEW **IMPROVED RAM EXPANSION SUPPORT.**
Now many more external Ram Expansions will work with all Action Replay III commands.

- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. "Tagged" disks will only reload when you enter the code. Very useful for security.

MORE LEVELS

NEW **SET MAP -**
allows you to Load/Save/Edit a Keymap.

- **PREFERENCES**
Action Replay III now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.

- **DISK MONITOR**
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.

NEW **IMPROVED PRINTER SUPPORT -**
including compressed/small character command.

- **DOS COMMANDS**
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

NEW **FILE REQUESTOR -**
If you enter a command without a filename, then a file requestor is displayed.

- **DISK COPY**
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.

NEW **PLUS IMPROVED DEBUGGER COMMANDS -**
including Mem Watch Points and Trace.

- **BOOT SELECTOR**
Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

PLUS A MACHINE CODE FREEZER MONITOR WITH EVEN MORE POWER!!

EVEN MORE FEATURES INCLUDING 80 COLUMN DISPLAY AND 2 WAY SCROLLING:-

- Full M68000 Assembler/Disassembler ● Full screen editor ● Load/Save block ● Write String to memory
- Jump to specific address ● Show Ram as text ● Show frozen picture ● Play resident sample
- Show and edit all CPU registers and flag ● Calculator ● Help command ● Full search feature
- Unique Custon Chip Editor allows you to see and modify all chip registers - even write only registers ● Notepad
- Disk handling - show actual track, Disk Sync, pattern etc. ● Dynamic Breakpoint handling
- Show memory as HEX, ASCII, Assembler, Decimal ● Copper Assemble/Disassemble - now with suffix names

REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT - INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISITIVE!

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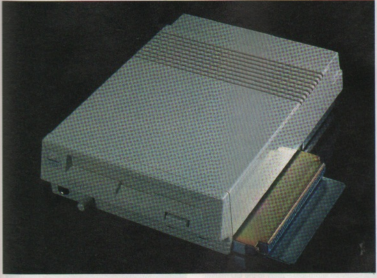


It was here, then it wasn't and now, at long last, it is. But what exactly is the A570 CD-ROM drive, and is it any good? Nick Veitch accesses the data...

DELIVER UNTO US...

They said it would be here by the summer. They were wrong, but at least they had the decency to hurry things up for an August delivery. Yes, the CD-ROM drive is finally amongst us – but is it any different from the machine we previewed all those months ago?

Not really, but a few things have been cleared up. Yes, the port at the back will accept IDE hard drives. The IDE standard is supported on a number of MS-DOS platforms so there is no fear of supply drying up. It should also mean that drive units will be more competitively priced. The power unit is still the old ugly but reliable 'brick' style.

COMPATIBILITY

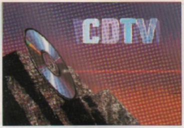
Hmmm... Well, it should be compatible (when working in CDTV mode) with all CDTV software. It should be, but remember that the CDTV doesn't come with a keyboard or a mouse. Remember also that the A570 unit doesn't come with a remote control unit. To get around this the units were designed to have roughly compatible controls. In the same way that holding down the Alt and the right Amiga key on the keyboard is the same as pressing the right mousebutton, the control pad of the CDTV should be emulated by the mouse buttons and the cursor controls. This burden of compliance lies with the developers, though. In practice, the Operating System sees to most of this compatibility but there can still be some problems. Whilst using *Sim City*, for example, neither the keyboard nor the mouse seems a suitable replacement. Perhaps Commodore could have included a controller and infra-red transciever with the pack.

AND THERE'S MORE

The advantage of having an A570 over a standard CDTV is that you will be able to access CD ROMs in Amiga mode as well as in CDTV mode. The CD-ROM drive recognises all CDs which conform to the ISO9600 standard, and these include many of the disks full of clip-art, fonts, or raw data intended for use with IBM PC or Macintosh CD-ROM systems. Obviously, you will not be able to execute any of the files you may find on these disks, but you can use the data files. Graphics can be easily converted over using *Art Department*, and even Adobe fonts can be converted using the utilities now bundled with *Pagestream* and *Professional Page*. In effect, the CD-ROM now becomes like an extra large Read-Only floppy. Discs are loaded into a special caddy (which resembles an optical cartridge) and just slot in the front. This isn't quite as convenient as the slide-in-and-go CDI players, but it makes more sense, reducing the possibility of errors and damage to your precious CDs. If there is a break or a scratch on a music CD, chances are you might not even notice it, but when it comes to binary data even the slightest error could screw up the whole application.

You can still use the A570 as a normal CD player, too. When booting up in CDTV mode simply insert the disc and the familiar CDTV control panel will pop up. Play the tracks normally, select

➤



CD UPDATE

There are now a growing number of CDTV titles around, with more appearing at regular intervals. The latest releases reflect the amount of data capable of being stored on this format. *Trivial Pursuit* from Domark (reviewed on page 70) comes on two disks and comprises over two thousand questions, including picture and music questions which are not possible within the framework of the original boardgame. Few developers have yet exploited the CDXL format, which allows quarter frame animation from CD. So few in fact that Commodore have started producing at least one such title themselves – an American Football simulator complete with animated anchorman, half-time interviews and coaching tips. We previewed *CDTV Sports Football* in our news pages last month, and we hope to bring you a full review very soon – as this sort of TV-style simulation and humorous presentation is ideally suited to the CD medium...

A 570

The Competition

The CDTV is not the only home multimedia system available. Philips have a rival system, the CD-I unit (CD Interactive) which you may have seen advertised in various magazines and on huge 16-sheet hoardings. The CD-I standard is set so other consumer electronics manufacturers will soon join in, giving a choice of units from JVC, Sony and the like. Initially, these units will be fairly expensive because they are not based around a computer, but around dedicated hardware. The software likely to be produced promises in time to incorporate full-frame animation at a decent speed, but at the moment this would require some additional hardware like the MPEG compression chip, bumping up the price even more. Although launched after the CDTV, titles are being released for CD-I at a faster rate and more developers are sure to join the fray on the side of CD-I because it will probably have a much greater marketing budget. Also edging into the arena is the Sony Data Discman and looka-likes. These units work on a smaller disc (the 3" ones which used to be used for audio CD singles) and are designed to be used as travelling notebooks. Time Out magazine has already released a number of City guides in the Electronic Book format. Although the discs have only about 200Mb capacity this is easily enough for games, reference works and language translators

a sequence or choose the random play option. The CD side of things will also handle CD+MIDI and CD+G formats. CD+MIDI contains extra data which is read as the music is playing. This MIDI data can be used to control a keyboard attached to the Amiga via the serial port.

IMAGE HANDLING

CD+G is a format which includes slowscan or still frame graphics alongside the music data. These images can be handled quite adequately by the Amiga display and, in fact, the A570 is one of the very few systems (along with the CDTV) which are capable of displaying these graphics. In Amiga mode you can still use the A570 as a CD player, via a small utility supplied. Although Commodore claim that the CDTV will be able to use Kodak PhotoCD discs (where you have your films developed onto CD instead of normal prints), there is no evidence at this time that the A570 will be able to handle this format. The same goes for the Electronic Book format discs, which are roughly similar to the old style CD singles and are much smaller, handling only around 200Mb of data.

CONCLUSION

As a CD player, I think I'd still rather have a standalone unit. Your Amiga is going to look a bit conspicuous in a big stack of matt black and chrome amps and tape decks. Still, it's nice to have the option. The A570 is actually a CD-ROM drive and a multimedia engine in one, so you have to look at its cost relative to those systems. The A570 is considerably more flexible than the CDTV, and in some ways a much more viable unit. This is only the first step on the path to make all Amigas CD-compatible. Admittedly, you can get SCSI CD drives for your Amiga already but they can't operate in CDTV mode. This is the perfect – and relatively affordable – entry to the CD market. Simply because it links to your Amiga makes it a worthwhile buy, as poor CDTV owners have been alienated by several controller-based compatibility problems, and although the mouse doesnt exactly perform perfectly, it is a slightly more fluid control system. In addition, as the machine is aimed at the 'lower end' of the market, it means that more larger software companies will start to produce CDs for it – at last. The only query about such an excellent unit is why did it take so long and why did Commodore produce it after the stand-alone CDTV instead of before?

A 570

. . . at a glance

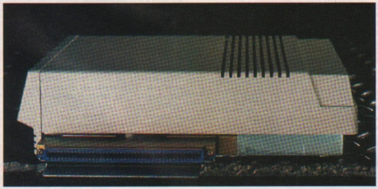
• CDTV compatible • Requires 1Mb chip memory • Over 600Mb storage • Disable switch • Audio through for Amiga sound • Works as a CD player • Volume control

Commodore Business Machines (UK) Ltd., The Switchback, Gardiner Road, Maidenhead, Berkshire SL6 7XA. Or give them a call on 0628 770088

COMMODORE £399

Better late than never – and a neat entry to the world of CD...

EASE OF USE	88%
VALUE FOR MONEY	70%
EFFECTIVENESS	94%
FLEXIBILITY	93%
INNOVATION	90%
OVERALL	**87%**



Slotting neatly into the side of an A500, the A570 looks perfect when next to your machine. In addition, installation and loading is extremely easy to effect, ensuring that any unnecessary hassle is kept to a bare minimum.

AMIGA PERIPHERALS

GVP
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VALLEY
PRODUCTS

QUALITY AMIGA PERIPHERALS WITH A 2 YEAR WARRANTY

Silica Systems are pleased to present the GVP range of peripherals. GVP are the world's largest third party manufacturer of peripherals for the Amiga range and have a reputation for high specification, quality products. The company was founded only four years ago by a man who knows about the Amiga, Commodore's ex-Vice President of Technology. He, along with a team of Amiga experts including other ex-Commodore staff, understand the add-on requirements of Amiga owners better than anyone. Not only do GVP provide peripherals that Amiga owners want, they also offer peace of mind, with a 2 year warranty on the products they manufacture. So, if you are looking for the very best in peripherals for your Amiga computer, look no further than GVP.

GVP's HD8+ hard drive and A530 hard drive with 40MHz accelerator, represent the highest quality Amiga 500 peripherals, at very affordable prices. Each incorporates a Quantum disk drive, RAM expansion capability, custom VLSI chip and FAAASTROM SCSI driver, for unbeatable performance.

The HD8+ hard drive offers up to 8Mb of standard internal Fast RAM expansion and the A530 Combo, up to 8Mb of 32-bit wide fast RAM expansion. Both feature a SCSI controller, which supports up to 6 additional devices, and an Autoboot/Game cut-off switch. Both are available in 52, 120 and 240Mb hard drive versions.

In addition, the A530 Combo zooms the Amiga forward with its 030 accelerator, running at a blistering 40MHz. This enables your Amiga 500 to run at an incredible 12.1 MIPS, faster than an Amiga 3000! No other product in the world combines all the features found in the A530 Combo! A plug-in PC emulator option, shown below, is available for both the HD8+ and A530 Combo.

	HD8+	A530
HARD DRIVE		
QUANTUM SCSI HARD DRIVE 52, 120 & 240Mb VERSIONS	●	●
ULTRA FAST 11ms ACCESS	●	●
TRANSFER RATE UP TO 2,100K/sec* (*THE RATE OF THE 240Mb HD)	●	●
ACCELERATOR		
40MHz 68030EC CPU		●
OPTIONAL 68882 MATHS CO-PROCESSOR		●
RUNS AT 12.1 MIPS (FASTER THAN AN A3000!)		●
HARDWARE SUPPORT TO MAP KICKSTART INTO 32-bit WIDE FAST RAM FOR FASTER OPERATION (LIKE CACHING THE OPERATING SYSTEM)		●
RAM BOARD		
UP TO 8Mb OF 8 OR 9-bit FAST RAM (8 OR 9-bit WIDE SIMMS - 120ns OR QUICKER)	●	
UP TO 8Mb OF 32-bit WIDE FAST RAM (32-bit WIDE SIMMs - 60ns)		●
1Mb POPULATED		●
OTHER FEATURES		
HDD/ACCELERATOR 'CUT-OFF' SWITCH FOR 100% GAME COMPATIBILITY	●	●
SCSI CONTROLLER FOR UP TO 6 ADDITIONAL DEVICES	●	●
VLSI CUSTOM CHIP	●	●
FAAAST ROM SCSI DRIVER	●	●
IDENTICAL COLOUR & STYLING TO THE A500	●	●
BUILT-IN VENTILATION FAN TO PREVENT THE UNIT FROM OVERHEATING	●	●
DEDICATED POWER SUPPLY	●	●
'MINI-SLOT' FOR FUTURE EXPANSIONS (E.G. PC EMULATOR)	●	●
REMOVABLE MEDIA SUPPORT	●	●
DIRECT MEMORY ACCESS (DMA) STYLE FOR ULTIMATE PERFORMANCE	●	●
EASY-TO-USE SOFTWARE	●	●
2 YEAR WARRANTY	●	●

WHAT THE PRESS SAY:

'Superb build, excellent aesthetics and blinding speed make this the best A500 hard drive' — AMIGA SHOPPER

'GVP claims this is the fastest hard drive in the world and none of our tests could prove that wrong'. AMIGA SHOPPER

'Overall: Untouchable. THE choice' AMIGA SHOPPER

'Still the best hard drive... 92%' AMIGA FORMAT

PC EMULATOR

PLUG-IN OPTION FOR HD8+ & A530

- 16MHz 80286 processor
- 287 Maths Co-Processor socket
- 512K of PC RAM plus the use of Amiga RAM
- Supports Hercules, CGA, EGA/VGA (monochrome) and T3100 video modes
- Runs MS-DOS (3.2 and upwards) plus thousands of other PC programs

This powerful 286 emulator module simply plugs into the "mini-slot" of the GVP HD8+ or A530 (without invalidating the warranty). It has full access to the Amiga's resources and allows you to run PC and Amiga programs at the same time, giving you two computers in one.

£249
Ref: EMU 0500

PLUG IN
HARD DRIVES & ACCELERATORS

PRICES FROM:
£379

MODEL	52Mb HD	120Mb HD	240Mb HD
HARD DRIVE HD8+	£379 Ref: HAR 0852	£499 Ref: HAR 0920	£779 Ref: HAR 0942
A530 COMBO HARD DRIVE & ACCELERATOR	£749 Ref: HAR 0962	£869 Ref: HAR 0974	£1149 Ref: HAR 0986

FOR ALL AMIGAS

AMIGA 1500 + 2000 + 3000 PRODUCTS

SOUND SAMPLER

- 8-bit stereo sampler
- Plugs into parallel port
- MIDI support for song input
- Extensive editing features

For the semi-professional and audio hobbyist a high quality 8-bit stereo sound sampler that connects into the parallel port on any Amiga 500, 600, 1500, 2000 or 3000 computer. Combined with one of the fastest, most powerful and easy-to-use sound and music editing programs available. Includes 4-track soundtracker file compatible sequencer.

MUS 2500 **£59.95**

ACCELERATORS

- 68030EC/68030EC/68030 processor
- 25/40/50MHz clock speeds
- 68882 Maths co-processor
- Expands to 13/16/16Mb 32-bit RAM
- 32-bit SCSI controller on board

Fast 68030/68030EC accelerators with memory upgrade and SCSI interface boards. Each comes complete with a 68882 maths co-processor and RAM upgrade as standard. Kit available, to mount 1" Hard Drive on any G-Force 030 Board, GVA 4251, £39.95

25MHz/1Mb	Ref: UPG 6110	£599
40MHz/4Mb	Ref: UPG 6430	£999
50MHz/4Mb	Ref: UPG 6508	£1399

HARD CARDS

- Factory installed Hard Drives
- 52, 120, 240 & 420Mb options
- On-board 8Mb memory sockets
- Add up to 6 SCSI devices
- Easy to install SIMMS

The Impact II HC8 hard cards are the equivalent of the HD8+ hard drive, but for the 1500 and 2000 models. Not only are they some of the fastest hard drives available, but they also incorporate an unpopulated 8Mb RAM expansion board.

52Mb	Ref: HAR 1352	£299
120Mb	Ref: HAR 1420	£449
240Mb	Ref: HAR 1540	£699
420Mb	Ref: HAR 1542	£1299

VIDEO ENHANCER

- 768 x 580 PAL Resolution
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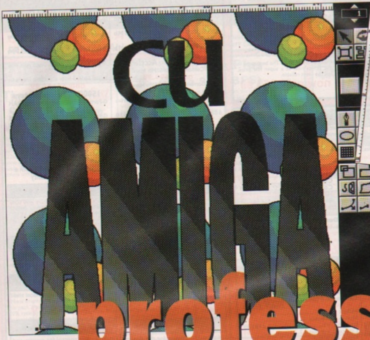

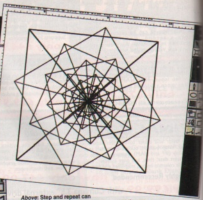

Above: Step and repeat can be a lot more useful than this, but you get the general idea.

Left: Graduated fills. This is just a 16-colour screen rendering, the output is a lot more detailed.

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Not all art packages are the same. Nick Veitch draws on his experien

AN ART APART

A structured art package is a necessity for anyone taking design or Desktop Publishing seriously. You can't always rely on being able to get a picture of something and even if you could, illustrations can often be a lot clearer and easier to understand. A bitmap paint package may be alright for the lowest quality of newsletters but anybody who cares about their output is going to go structured.

On the Macintosh they have *Illustrator*, on the PC it's *Corel Draw*, on the Amiga it can only be *Professional Draw*. In fact, there is only one challenger to *Professional Draw – Design Works* from New Horizons, which is designed primarily to be easy to use and lacks any real power. This lack of competition is worrying – where is the incentive for making the product better?

YOU CAN DO MAGIC

Well, on loading up there doesn't seem to be much difference between *ProDraw3* and *ProDraw2*. The screen looks pretty much the same – as does the tool bar – apart from one significant addition. There's a little lamp next to the selector tool. It's a magic lamp, because it means that *ProDraw* now accepts Genies, the slightly customised version of ARexx already adopted in *Professional Page*. The genies can control every aspect of *ProDraw*, automating any repetitive function, performing any tedious replication. There are around 40 of these already defined, many of which are very useful indeed. A lot of them mimic the functions on packages such as *Illustrator*, including step and repeat, or moving an object to a given layer, but there are several unique macros, including some 'Special Effects' which seem to have been constructed over a long weekend with the benefit of some therapeutic pharmaceuticals.

Unfortunately, you need to have ARexx before you can use these macros. It is also a great advantage to understand ARexx if you want to write your own macros. A simple text editor has been incorporated to help you make your own macros, but it's a shame that there is no recording function. A large number of macros which people may want to perform are just a simple sequence of maybe three operations and surely it couldn't be that difficult to record the mouse movement and menu selections.

LINING UP

The most basic element of any artwork in *ProDraw* is the line. A line isn't necessarily straight, though, and it can be given velocity at any point, turning it into a bezier curve. By holding down the left mousebutton whilst marking a point, you can stretch out a line indicating a 'velocity' or the tendency for the line to go in that direction. Having released the button you can now specify the second point at the other end of the line. You have now drawn a curve between two points, which will annoy any maths teachers you come across. It sounds a little difficult, but it becomes second nature very quickly. The excellent thing is that you can come back and edit all the points later. If you were drawing a nose, for example, and decided to make it a little more pronounced, it would just be a matter of moving a few points (imagine having to re-shade a bitmap drawing in HAM mode).

If this gets a bit too tedious for you, there is always the freehand mode. This is excellent when used in conjunction with a graphics tablet. You draw a line or a curve with the mouse and when you let go of the button the program draws points and approximates curves to follow your path. It can be a bit hit and miss (especially with the mouse) but remember that all the points can be edited later. You can even join points onto lines, take them away or break a link between two points.

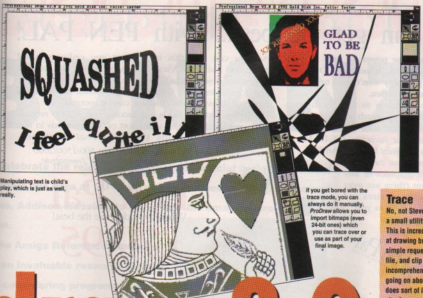
There are plenty of tools for manipulating your objects, too. Mirroring, stretching, rotating, grouping, combining – it's all there. Perhaps the most invaluable of the additions from *ProPage 2.0* is an 'undo' option. Simply press escape and the last action will be undone, instead of your artwork.

TEXT HANDLING

One of the most useful aspect of *ProDraw* is its ability to take a compugraphic font and turn it into a bezier curve structured clip which can then be edited. All object manipulations can be performed on the text and it can even be filled or blended to create surreal or special headlines for *Pro Page*. Using the new hotlink feature, you can send the clip direct to *ProPage*. You can even wrap text around objects using a special 'fit to curve' option. *ProDraw* now supports the same type of CG font as *ProPage*, which means an end to the duplication of hundreds of font files all over your directories, not to mention all the time it took to create them. *ProDraw 3.0* comes with the same font manager utility that was bundled with *ProPage 3.0*, enabling you to draw on the stockpiles of Public Domain Adobe Type 1 fonts.

THE NEED FOR SPEED

The trouble with complex applications like this is that they tend to be incredibly slow. Well, *ProDraw* has come a long way since its original version in terms of speed. But still, there is nothing more annoying than trying to get on with your work and having to stop for about 10 seconds every time something is added to the screen. To get around



Manipulating text is child's play, which is just as well, really.

If you get bored with the trace mode, you can always do it manually. *ProDraw* allows you to import bitmaps (even 24-bit ones) which you can trace over or use as part of your final image.

Left: Well, it is supposed to be for clip art, but it is equally excellent for designing labels, or potential album covers.

ldraw 3.0

ienc with possibly the best structured art package ever...

this there is a wireframe mode, allowing you to see only the outlines and the points. This is a lot faster and works quite well, but of course you have to see the detail to make sure that you've done it right – meaning you must keep switching between wireframe and preview modes. It also includes a new feature which allows you to select sole objects to be wireframed, so you can work in detail on one object and wireframe the rest.

Structured Versus Bitmap

Every time we review a structured art package or some compugraphic fonts we always have a discussion about the difference between them and their bitmapped cousins. Well, this time is no different. A bitmap is just that: a map of bits. A bitmapped picture is always a certain number of pixels wide and a certain number high. Even if you rescale it to be twice as high and twice as wide in terms of physical dimensions, it is still the same resolution; the same number of pixels high and wide.

Structured artwork is a bit like Schroedinger's Cat – it doesn't have a resolution until you look at it. Because the picture is made up of instructions on how to draw it rather than actual pixels, it can be rendered at any resolution you like. In information level terms, this means a structured drawing has a theoretical infinite amount of information (although this is cheating a bit). The result is better pictures.

Structured art is a lot more versatile than bitmap images, but inherently less detailed. It lends itself best to illustrations and diagrams.

At the very least, certain types of pictures. Illustrations are well suited to structured art: things like logos, diagrams, schematics and maps. Because of the curvilinear nature of the artwork it is not suited to realistic reproduction.

CONCLUSION

With its now standardised postscript output, extended font support, and ARexx compatibility this is an art package that is worthy to stand beside the mighty *Professional Page*. With the emphasis in the Amiga world on bitmapped art and video work, it's nice to see this degree of commitment to the home publishing crowd.

PRO DRAW 3.0

. . . at a glance

* Structured Art package * Cg Font support * Hotlinked to *Pro Page* * Graduated fills * Arexx / Genie support * Bitmapped tracer supp lied * Postscript output * 24-Bit bitmap support *

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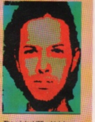
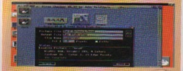
Trace

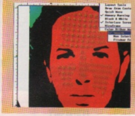
No, not Steve Merrett's sister or Sharon's friend, Trace is a small utility for converting bitmaps into structured art. This is incredibly useful if you are actually quite hopeless at drawing but need to create clip-art. Trace appears as a simple requestor. Simply specify the input IFF, the output file, and clip name, and press the trace button. Fairly incomprehensible stuff will pop up in the text window going on about contours and matched points. I suppose it does sort of let you know how far along the trace is and also how complicated it's likely to be. Anyway, it looks sort of techie so it gets the thumbs up from me. The only thing you can alter is the fill option and the pixel sensitivity. The fill option decides whether the resulting image will just be an outline or if the structured objects will have fills. The pixel sensitivity is more important. If you set this too high you will be in danger of replicating the steps in between the pixels – the dreaded jaggies that structured art is supposed to avoid. On the other hand if you are a bit casual about it all the result will look like it's been left at gas mark 5 for a couple of hours. Usually the default setting is about right. Trace can't handle HAM images, but there would be no point anyway. The idea is to trace simple images, not ones with thousands of fiddly shades in them.



The original IFF, which has been reduced to four basic colours...



... *ProDraw*'s trace option in action...



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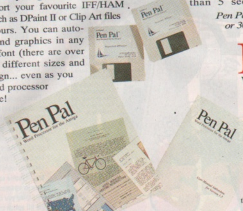

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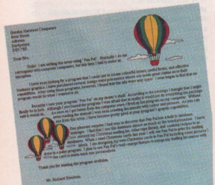

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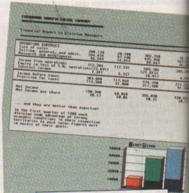

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- **B. Kernighan and Ritchie**
- **C. Mork and Mindy**
- **D. Anthony and Cleopatra**

2. Much is said about the Amiga and its DMA channels, but what does DMA actually stand for?

- **A. Diribonucleic Multiphase Adaptor**
- **B. Don't Mind Agnus**
- **C. Direct Memory Access**
- **D. Distant Memory Access**

3. The person regarded as being the father of modern computing is:

- **A. Sir Charles Babble**
- **B. Sir Charles Babbage**
- **C. Sir Charles Cabbage**
- **D. Steve Merrett**

And finally, just in case too many of you found the above questions too easy, here's the amazing tiebreaker. Complete in less than 3000 words the following sentence: 'Send those books straight off to me because...'

1. The closing date is the 30th September, 1992.
2. The competition is not open to employees of Emap Images, Addison-Wesley, or people who don't like motorbikes.
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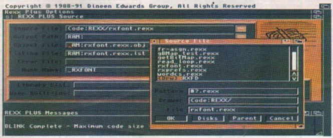
rexxplus compiler V1.2

There is more than one way to run a script, as our resident ARexx expert, Alex Gian, discovers with DEG's new package...

TAKEN TO TASK

On the whole, ARexx is still viewed as a practical macro language – and very few people would consider writing a complete application program with it, not least because of its lack of speed. The reason for this is that as it is an interpreted language, the program is decoded one step at a time. But now ARexx no longer has to be an interpreted. Enter the *RexxPlus* compiler.

The package comes with a well presented 280-page wire-bound manual which includes a complete description of the language. The compiler language is essentially a superset of ARexx, with some very handy additions. The package also contains a disk with most of the major freely distributable ARexx utilities to date, and the necessary bits to get them working with the compiler. A very practical Intuition interface allows easy access to most of the compiler's features. In interlace mode all the option buttons appear in one window, but if you select non-interlace, they are spread over two windows, that can easily be toggled back-front, for better legibility.



BLINK Complete - Maximum code size

The excellent Intuition interface of the compiler makes it simple to use, even for the daftest of people.

PERFORMANCE

The increase in speed of normal ARexx scripts varied considerably. In general, the more involved the script, the more the benefits – a halving of the execution time was typical. The best gains, however, were on really long and involved scripts, such as those used in complex format conversions, pattern-matching, and related data processing. A script with three nested DO loops and lots of arithmetic and parsing ran almost three times faster when compiled! On the other hand, some small scripts had no significant speedup, and one even ran slightly slower. Intuition scripts are a bit more tricky to time, but there is no doubt that the compiled programs executed faster, and were neater.

IDCMP instructions (mouse-clicks, etc.) are converted into ARexx strings by most support libraries, and in this form they are passed around the ARexx ports of the system. The compiler does many optimisations to port access, so that programs do not have to go through the time-consuming search of the system lists, but find the ports directly. The authors of *RexxPlus* claim speed increases of 4-12 times. I think that, in reality, four times would certainly be possible.

The best results appeared when calling maths functions. The compiler has built-in support for the freely distributable rexxmathlib.library and allows it to be used at maximum speed. Since this library will take advantage of a co-processor if one is present, there is a genuine real possibility that you could ARexx with any work involving mathematical computation.

OPERATION

One of the most intelligent features of the compiler is that it allows interpreted and compiled programs to run and interact together. A special command sets up the environment to run both *RexxPlus* and regular ARexx scripts. A new logical directory, RPDir:, rep laces Rexx:. This has been implemented very well, and posed no compatibility problems. The code generated by *RexxPlus* is 'pure', which means it can be made resident in memory, and does not have to be loaded up every time it is needed.

From the point of view of execution speed, the main contributing factor is the way that the library calls are handled. For every ARexx library (and function host) it is possible to have an equivalent *RexxPlus* library. These are used at compilation time, and allow the support libraries to be accessed directly. Cutting out the intermediate step of library (or function host port) search, gives substantial speedups. Even better, the rexxsupport.library and rexxmathlib.library functions can be accessed as built-ins by the compiler.

Support is also provided for the included PD libraries, and for some commercial products including a function host for the very popular *Video Toaster*.

TIME TABLE This table gives a summary of run-times for compiled and normal ARexx scripts (unaccelerated Amigas). As you can see the speed increases are significant, and will certainly attract serious ARexx users.

Test	Normal	Compiled
Nested Loops with conversions	677 sec	243 sec
Drawing 1000 random graph lines	69 sec	38 sec
RexxPlPlot 'Mexican Hat' calc.	270 sec	45 sec
Math library 'Savage' test	408 sec	71 sec

INTERPRETING

One major difference between *RexxPlus* and ARexx is that the INTERPRET instruction isn't available to the compiler. Any code containing it will have to remain in its interpreted form. The executable programs carry a substantial amount of overhead, and even a small script will end up as an executable of around 30 kilobytes – the PD utility, *ExecRexx*, is more suited to the job. The code generated is also pure and the executables are no larger than the source code. You can't distribute your work without DEG's permission, though.

CONCLUSION

This is an impressive program, but there is room for improvement. Perhaps there could have been a utility to create *RexxPlus* support files automatically? After all, many new libraries and function hosts are appearing all the time, and I do not think it would be viable to rely on DEG for every single support file. This is a must for ARexx fans and serious users. As ARexx itself gains greater acceptance, this could well become one of the standard Amiga programs of the future.

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☐X **V350 BUSINESS CARD MAKER** Design your own Business cards.
☐ **V365 RED SECTOR MODULES (MUSIC)** : Various music modules for use with the RSI Demo Maker .
☐X **V366 600 BUSINESS LETTERS** There are over 600 Standard business letters on this disk. Can be used as they are, or insert some parts into your own letters/text.
☐X **V390 THE DESK TOP PUBLISHING PROGRAM** The first amiga PD Desk Top Publishing program. Includes various extra features over the old Word processor, Text Editor, Graphics editor & loads more.
☐X **V392 AMICASH BANKIN** The best bankin program that I have ever used on the Amiga. Very easy controls.
☐X **V394 CHEMESTETICS** Program that draws molecules using the calotte model. Excellent effects.
☐X **V401 WINDOWBENCH v1.0 (2)** An excellent Workbench II replacement for all v1.3 users.
☐X **V410 PRINTING: FASTJET** For Deskjet 500 users you want to use the resolution enhanced graphic set.
☐X **V413 WORK STATION** Not just another WB clone. It's a collection of utilities with the Workbench theme. **(2)**
☐X **V415 VIDEO SCREENS:1** Back ground pictures for video production work. Nice back drops.
☐X **V417 SUPERBENCH & EXTRAS (2)** An excellent re-placement disk with more utilities than the original.
☐ **V420 CURSOR BASIC COMPILER** Compile any Amigo Basic program with this utility disk.
☐X **V423 C: COMMANDS** This disk is filled with utilities which can be used in Startup-sequences
☐X **V424 ANTI FLICKER** Said to stop the flicker in High Res mode during some Amiga program aberations.
☐X **V431 IMPLODER v4.0** Reduces file size for storage on hard drives our your own disk collections.
☐X **V433 ANIMATION STUDIO** An excellent Animation creator for you to make your own little animations
☐X **V439 AMIGA C: MANUAL II** This is the complete C: manual for the Amiga & describes all parts of the C: system. It also contains various examples, & some more complex, Tutorial is there to help you out. **(4)**
☐X **V444 PRINTER DRIVER DISK III** Now contains instructions on how to install them. includes over 90
☐X **V445 JRCOMM v1.02** This is the latest version of the excellent modem based computer program.
☐X **V479 CHESS & CHESS UTILITIES** A collection of chess related Puzzles, Programs & Utilities.
☐ **V484 ADVENTURE SOLUTIONS (2)** Good collection of adventure solutions for various games.
☐X **V489 AMIBASE PROFESSIONAL II** Latest version of the excellent Database progam. Now includes various excellent new features.
☐X **V490 MESSY SID II** Will read MS-Dos disks. Transfer any text files to & from the PC. So you can do work on an IBM or an Amiga and swap text between them.
☐X **V493 DESKBENCH (3)** This is an excellent Work-bench replacement with special excellent utilities.
☐X **V497 BEATRIX POTTER CLIP ART** An excellent collection of clip art for any DTP program or Dpaint.
☐ **V498 THIEF SOUND RIPPER v3.0** Finds Sidmon 1, 2 (Midi), JHam cracker, future Composer, Sound monitor, Noise/Protracker, Startrekk-er,Delta, sound system, David Whittaker.
☐X **V499 STAR CHART v1.2** This is an excellent star plotting program with some interesting features.
☐X **V515 THE A64 PACKAGE v2.0 (2)** PD version of the 64 Emulator Actually runs faster that 64. Runs 64 basic. Transfers disks from your original 64 disk drive. This is Now in stock for £39.99 which includes the interface & a full regersted version of the Shareware program.
☐X **V517 VIDEO & AMIN : VIDEO DB,** A program for keeping track on your video tape collections. **RTAP,** Lets you play large anims on small memory machines.
☐X **V518 IMAGE LAB** This program is like a mini Art DEPT. **Tools On Tap** Does fades, colourbars & gray bar.
☐X **V519 VIDEO: STILLSTORE** Used to create over the shoulder graphic inserts like the 9'0 clock news.
☐X **V521 PLOTTING & GRAPHICS PLOTXY,** A powerful full featured plotting prog. **PLANS** A computer aided drafting prog. Requires ARP Library & ConMan v1.3
☐X **V522 ARP V1.3 : Conman v1.3c** Makes many im-provements to Dos. Includes full developers guide.
☐X **V523 DICE C COMPILER (2)** Matthew Dillons full featured powerful C compiler & environment system.
☐X **V536 CATALOGUE UTILITIES** A collection of utilities used to Catalog disk/ Video & Tape collections **(2)**
☐X **V546 KIDS PAINT** A painting program designed for children. Includes various colours & speech.
☐X **V549 ELECTROCAD v1.4** Another Updated on the cad electronics drawing preview written in Amos.
☐ **V554 R.S.I. MUSIC MODULES 2/3** Another selection of music from Red Sector. **(2)**
☐ **V556 RED SECTOR HELP DISK** Another disk to help you use the Red Sector Demo Creator.
☐ **V560 DUPLICATION & BACKUP II** A collection of copiers like Amiga Copy, Coder copy, Pcopy, Rattlecopy.
☐X **V567 PRINTER DRIVER GENERATOR** A selection of utilities with various excellent Printer Driver Generators.
☐X **V569 DUNGEON MASTER MAPPER** A little tool that creates maps of dungeons, lands which can be used by a DM for use in AD&D.
☐X **V570 DIRWORK v1.51,** File copier simulal to diskmaster & Sid but contains more commands to hand.
☐X **V571 WHOM II v2.02 (2)** The Dr Who database program. Gives all info on Dr.Who progams.
☐X **V573 FILE & HARD DRIVE MANAGEMENT (2) : HDCLICK v2.0,** A program selector to make Hard disk Menus. Starts with gadgets. **FILE MINDER,** Utility for maintaining files & Directories. **DOSCONTROL,** Tool that combines the functionality of many separate tools.
☐X **V575 HOME BUSINESS PACK (6)** Excellent selection of utilities based on word processing, Data Management, Spread Sheets, Accounts & Printing.
☐X **V582 DB** A Database with upto 50 fields max of about 1.2 million records. **CLICKDOS II,** An Amiga Dos enhacement utility. **FILEFIND & SUPERVIEW v3.0**
☐X **V583 ICONEDITOR III v2.0,** Can create Icons upto 640x200 pixels. **DOCTORICON v1.0,** Imports images as icons, Edit & Create any Amiga icon.
☐X **V584 EDUCATION : FASTFACTS,** Everything you ever needed to know about the solar system. **WORLD MAP** Produces diffenent sorts of world maps. **PLANETS** Instant locations of plants. **MATH MOUNTAIN**
☐X **V585 ARCHIVERS** A selection od most archivers, like LHArc, Zoo, LHWarp, Pak, LZ, PKAZip, Zap, Zippy.
☐X **V586 FONTS & C: COMMANDS : DISKSALVE,** Repairs damaged disks. **SWEEP,** Free unUsed allocated memory. **FONTASSIGN,** Assigns fonts to the SYS path.
☐X **V587 GELIGNITE FONTS (2)** A selection of fonts for use with any DTP Package or Dpaint disks.
☐X **V593 TEXT ENGINE v3.0** Another excellent word processor program Simple but will do the job
☐X **V599 BBASE II v5.3** This disk is one of the most well known database program. Recommend.
☐ **V603 POOL FORCAST v1.0** Perm-Check is designed to check football plans for winning lines (1Mb).
☐ **V604 PD COPY v3.0** New disk copy with some extra commands & quick copy modes buit in. (1Mb)
☐X **V605 PRO CALC v1.0** Offers the C or Machine code programmer a 68000 or FFP calculator when is use. (1Mb)
☐ **V606 SAMPLE MAKER v1.0** This works specially for those who are not able to make samples with a sampler.
☐ **V607 PRO TRACKER v2.1** Written by Lars Zap Hamre. Another update to the Ultimate sound making program.
☐X **V610 GOLF SCORES v1.64** It will record each round you play, Store it, make up an eclectic score NEW! You can also show graphs of scores & performance against par. NEWER! It will now work out stableford points.
☐ **V611 FOOTBALL LEAGUE EDITOR v1.0** Want to update your teams league position as the results come in.
☐X **V620 ASPICE v3.2** Circuit Analysis, A full featured program for electric circuit analysis.
☐X **V621 EDWORD v2.2** is a fully featured & operational Word processor which offers all standard features & More like Powerful ones.
☐ **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
☐X **V625 NCOMM v2.0** Contains, LHArc v2.0, LHArca v1.02, Zoom v5.40, DMS v1.03, LHA v1.11, LHASFX v1.11.
☐X **V627 DPAINT FONTS No's 1-3 (3)** The latest selection Fonts for use with any IFF DTP Program.
☐X **V630 AMICASH** Basically just keeps track of your transactions with your account/Bank, such as Direct debits, Cheques, Withdrawls ect.
☐ **V635 IBeM EMULATOR v1.05** IBeM is a CGA Colour IBM-PC emulator written to run on any Amiga This is a demostration version with a time limit of 15 minute. The shareware cost is US$30.
☐X **V636 VIDEO: SHADES & FADES ANIMFADER,** A utility to fade screens in & out. **SUPERVIEW** Will display IFF pictures. **TURBOTITLE** Create subtitles.
☐X **V637 TWIN EXPRESS v1.1a (2)** Trans any file direct from an Amiga or IBM Pc, By connecting the 2 machines to gether with a null modem cable. Board rate 115200.
☐X **V639 RADBENCH PLUS v2.0** Not just an update but a completly new set of utilities & Replacement.
☐X **V640 PAGESTREAM FONT PACK 1** A selection of fonts for use with Pagestream DTP Package **(5)**
☐X **V645 UEDIT v3.0a** Word Processor with learn modes, Online Help, A teach Mode, Split windows, copy & paste, undo & all standard features.
☐X **V646 SID v2.0 FILE MANAGER** Sid can be used for various operations, The best is probably the file copier.
☐X **V647 WORKBENCH HACKS** A selection of Hacks that have been reviewed in CU Amiga.
☐ **V648 TITANICS CRUNCHER v1.0** Cruncher with help & various protect modes includes speed changes.
☐X **V649 WP & SPELL CHECKING** A Collection of utilities. **PP v1.4,** Decrunches Power packer files as they arre loaded. SUPERSPELL v1.1, SPELLCHECKER v1.2, TEXTRA v1.11, Word processor. SCRAMBLER v0.1.
☐X **V650 CHECKBOOK ACCOUNT** Will manage your bank account with easy. Very good indeed.
☐X **V652 PAGESTREAM FONT PACK 2** A selection of fonts for use with Pagestream DTP Package **(5)**
☐X **V657 PC TASK** is a software IBM-PC Emulator. It allows you to run the majority of IBM software with no additional hardware. CGA Colour.
☐X **V659 COMPUTER DIAGNOSTICS v9.1** Is there a problem with your computer! Then what is it.
☐X **V660 HOME MANAGER** This is a great all in one address book with an inventory database & To-do list
☐X **V661 MODELLING : VERTEX** Allows you to create 3d objects without using the X, Y & Z views. Loads Sculpt 3d/4d & Turbo Silver.
☐ **V662 DCOPY v3.0 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy. Loads of other features.
☐X **V666 MODELLING OBJECTS** Contains over 20 vector objects in image format. Perfect with Disk V661
☐X **V667 STAR TREK OBJECTS** Contains the USS Reliant, NCC1701D & a ferengi plus a Porsche Car.
☐X **V668 PRODUCTIVITY / BUSINESS** Stock Analysis program. **SUBSTORE** Log Magazines with search scans.
☐X **V669 CELLULAR AUTOMA** This electronic model will allow you to simulate cellular circuits.
☐X **V670 ANDROIDS FONTS 1-7** Self installing font disks for use with DPaint programs (2 Drives Rec, **7** Disks).
☐X **V677 ANDROIDS VIDEO BACK GROUNDS** A selection of Background Pictures in IFF Format.
☐X **V678 DRAW MAP v4.0 (2)** Will now generate any 16 colour palette with user control, New features include larger maps with national boundaries, improved help and printing. 2Mb. (1Mb version V263, 1.2Mb version V526 (2)).
☐ **V680 OPTIMIZER v1.0** This latest version of the Disk Optimizer. Re-Creates Disks for faster Loading.
☐X **V681 GAME TAMER v2.2** Get a hold of that extra hard game & Cheat with Game Tamer v2.2.
☐X **V682 DEKSID v2.05** Hexa & Ascii Editor for use with your Amiga. Full Program but still Shareware $15
☐ **V683 SUPER LOCK v1.01** Seal your disks / Hard drives for your eye's only. Protects with a Password.
☐X **V684 FONT FARM** A collection of utilities based around the subject fonts. Character Editor v1.0, Font master v1.0, ShowFont v3.3, Set Font
☐X **V685 ASTRO PRO ASTROLOGY** The best Astrology program on the Amiga by far. See Amiga Shopper
☐X **V686 MULTIDOS v1.12** This is another must for people with PC disks. After this program has been installed your Amiga drives can read IBM Disks.
☐X **V687 VIDEO WIPES** A collection of IFF Brushs & background graphic effects.
☐X **V688 MAGNETIC PAGES v1.30** This Shareware program will create disk based magazines with graphics.
☐X **V689 WALT DISNEY CLIP ART** A Ppictures from various Disney Films.
☐X **V690 WORKBENCH v2.04 UTILITES (2)** This set contains the programs that should have been with WB 2.0. these powerful utilities take full advantage of the many NEW capabilities that are available in WB2
☐X **V692 RACE RATER v1.6** An excellent program for people who want information about races.
☐X **V693 HARLEQUIN VIDEO ART & FONT DISKS** A video production with excellent backgrounds & Fonts **(3)**
☐X **V696 POST v1.7** An excellent PostScript inter-preter for the Amiga which implements the Adobe lang-uage. Requires v39+ & ConMan v1.3
☐X **V698 AGRAPH V2.0** Brings the world a cheap Amiga program to draw Bar, Line, Area & Pie charts, for reports or presentations.
☐X **V700 PERM CHECK (PLUS)** Is designed to take the chore out of checking plans for winning lines.
☐X **V701 STRATA v1.0** is a landscape gener-ating program. It allows printing of them from any angle, from any position, & with any magnification.
☐X **V702 EASY RAMOS FOR EASY AMOS** This is the first update for Easy Amos user's. Requires Easy A
☐X **V703 AMOS UPDATER DISK v1.34** This update is a major update to the software, For example, you can now directly update a version of AMOS installed on a hard-disc.
☐X **V704 AMOS COMPILER v1.34** Conatains the second Public Domain AMOS Compiler Update.
☐X **V705 MED v3.21** Excellent update to the famous music program Med.
☐X **V707 SCALEABLE CLIP ART (3)** This is pack of completely new scaleable Clip pictures for Pro Draw
☐X **V710 AREXX TUTORIAL** Includes several sample Arexx scripts & sample progs. Also APIG: Library.
☐X **V711 UNIX** Contains a working demo of Minix, A Unix workalike. Minix is system call compatable.
☐X **V712 PROTEUS BBS** An excellent program for modem & Hard Drive used to start thier own BBS **(2)**
☐X **V713 COMUGRAPHIC FONTS** Contains 2 clipart style fonts & 4 actual typefaces for use with WB 2.04+ & desktop publishing &/or video projects.
☐X **V714 24-BIT** Contains Rend24 which allows you to proof toaster generated 24-bit anims. Also utl's to convert IFF's to IBM VGA/Windows readable format. Also contains latest JPEG file compressor.
☐X **V715 THE COMPLETE BIBLE** With the entire text of the New Testament & Torah (Old Testament). 1Mb **(3)**
☐X **V718 SPECTRUM EMULATOR v1.4** Which is NOW!! 3 times faster. Requires a spectrum computer.
☐X **V719 FREECOPY v1.8** Removes protected games copy protection so that the user can install them on HD.
☐X **V720 DISKPRINT v3.51** A label database which printers & stoes disk labels. combined database & print utility for disks. Works fine with every printer.
☐X **V721 ORDER v1.7** Excellent database program
☐X **V722 PROTRACKER v1.1** This is the first version which is completly compatible with the Amiga plus.
☐ **V723 BOOT INTRO CONSTRUCTION SET** A collection of utilities to create excellent Boot intros.
☐X **V724 PRINTER DRIVERS 4** This is an updated Drivers disk : HP Deskjet 500 & 500 Colour, Canon BJ10e, BJ130, BJ300, Nec24p, Oki24p, 39p, Star24p, Panasonic9, Seikosha9.
☐X **V725 THE SUPER KILLERS V2.5: BOOT X v4.50,** This is the best virus killer disk to date kills over 252 virus & may be more, Includes excellent killers. Including **VC v6.06, Zero virus III v1.21 & VT v2.41.**
☐ **V726 COPPER EDITOR v2.0** Enable you to create those nice colour lists found in games like Turrican II
☐X **V727 THE ART OF MED 2** A another excellent select of Med tunes.
☐X **V728 MOBED II** This is a movable object Sprite Editor
☐X **V729 EDIT KEYS** An excellent keyboard editing program.
☐X **V730 ICON MANIA** An excellent selection of Icon clip Art for your WB Disk.
☐X **V731 AMOSBROT v1.1a** This update has even more fractal types which include Logistic Equation, Coast lines & trees see As for reviews
☐X **V732 WORKBENCH v2.04+ UTILITIES 3** DCopy, Boot menu writer, F-Pic, Scenery, Huge, QED.
☐X **V733 SOFTWARE LISTER v1.6** This program is designed to keep a track of your Software collection.
☐X **V734 THE MAIN EVENT v2.0** This autoschedular will execute programs / script files at any given date.
☐X **V735 MEMORY MANAGER v1.1** Select any amount of Chip / fast ram
☐X **V736 THE DESK TOP HARPSICHORD** Instrument simulator Program
☐X **V737 EDUCATION** This is a set of Animations to give a basic knowledge on Steam Engine's, Four Stroke Petrol Engine's & The Gasturbine Engine (3)
☐X **V740 POWERBENCH v1.2** The WorkBench disks with more Power. This 2 disk set has been cruched & Opimized for maxium storage. **(2)**
☐X **V742 ONLINE v1.4** Program will allow you to find cheats within games.
☐X **V743 TERM v2.0** This is the best modem program on the Amiga. WorkBench v2.04+ Only. **(2)**
☐X **V745 THE PROFESSIONAL C MANUAL v3.0** This is the largest collection of documents, examples & utilities in C for the Amiga. It consists of six manuals, with more than 40 chapters, 175 fully excutable examples complete with source codes. Full instructions for C ☐ (12) Uncrunched) & only ☐ (5) crunched
☐X **V757 AMIGADEX v1.61** Creates / converts your Amiga into a card Database system. Very well done.
☐X **V758 TEXTPLUS v4.0e** Another update of this excellent Word processor program Now compatible with TeX The professional typestting program found in the Fish collection.

STAR TREK

☐X **AT05 KLINGON D7 CRUISER,** fires torpedoes while passing by. **NCC-1864 RELIANT** Very good.
☐X **AT10 ENTERPRICES,** Leaves the Star station dock. **NCC 1701-A,** The classic original Animation.
☐X **AT17 THE TWOK NCC-1860,** Reliant & the NCC 1701-A-Enterprise.
☐X **AT18 TWOK-0,** Anim **NCC 1860 Avenger** & **NCC 1701-A-Enterprise.**
☐X **AT22 APPROACHING VESSELS,** Animation, Binary Flight Wireframe
☐X **AT23 STAR TREK FLEET MANEUVER** NCC-1940 Fly over & by animation. excellent classic
☐X **AT33 THE PROBE II** Animation. **BRID OF PREY** Anim from Star Trek.
☐X **AT34 LEAVING SPACE OFFICE,** Animation. **DOCKING,** Animation from star trek. **ATTACK MODE,** Bird of Prey Scout hip in attack mode.
☐X **1060 STAR TREK THE NEXT GENERATION,** This game is by Terry A. Mc Intosh. v1.47 *
☐X **1081 THE UTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now with English instructions.
☐X **2222 STAR TREK THE NEXT GENERATION** This is the latest quiz game based on the Next generation **(2)**
☐ **2501 STAR TREK** Game / Jimbo Barber. American version **1Mb** & **(2)**
☐X **2503 STAR TREK** Game by Eric Gustafson US Inport **1Mb** & **(3)**
☐X **V367 STAR TREK INFORMATION** A Database of all the original series.

ERIC SCHWARTZ (* = 1Mb)

☐X **981 STEALTHY MANEUVRE II** *
☐X **1085 F-16 SWISS FLYING** *
☐X **1609 NAVY AGRESSOR, SOVIET SOFT LANING, STEALTH BOMBER** *
☐X **1700 ANTI- LEMMINS (2)** 2Mb
☐X **1703 DATING GAME (2)** 3Mb
☐X **1842 SHUTTLE COCK** *
☐X **1850 LATE NIGHT / TERMINAL***
☐X **2013 AGILLITY** *
☐X **2021 VIETNAM CONFLICT** *
☐X **2133 GULF WAR CONFLICT** 2Mb
☐X **2307 AMY AT THE MOVIES II (4)** 1Mb, 2Mb, 3Mb +
☐X **2311 AMY vs WALKER II (2)** 3Mb
☐X **2384 AMY AT THE BEACH (2)** 3Mb
☐X **2427 CAMOURFLAGE** *
☐X **2430 POGO II** 2Mb
☐X **2474 AMYHIST** Introduces Amy the squirrel to your Amiga screens.
☐X **2475 BATMAN & VTOL CONTEST** *
☐X **2476 HOW TO RUN** Into a wall. Very funny Animation by E.Schwartz
☐X **2477 AMYWALKS** Anim of Amy the squirrel Walking. & **AMYJOGS** *
☐X **2478 UNSPORTING** Starring the A10 Thunder bolt aircraft better known as the WarHog. Hunt & Destroy tanks. 2Mb
☐X **2499 ERIC SCHWARTZ TOR** *
☐X **2500 THE SKY DRIVE** *

GAMES

☐ **1073 TETRIS ORIGINAL** This is the closest game to the original tetris computer game. A Classic
☐X **1420 DTRIS** This is the best 2 Player Tetris game.
☐X **1454 MEGA BALL** An excellent Arkanoid game
☐X **1486 SOLITAIRE & SOLITAIRE ROYAL** Card games
☐X **1561 TRITWIS** This is the best version of Tetris on the Amiga. with 1 player, 2 player & 3 Payer options.
☐X **1735 ASTERIODS** 'THE ORIGINAL' Another old classic. This is the original classic computer game.
☐ **1747 LLAMATRON GAME 2001 By Jeff Minter** Briliant stuff & An excellent production. Shoot to kill
☐X **1749 SCRAMBLE** 'The Original' Remember that old classic well is now on the Amiga.The Shoot em up.
☐X **1870 PATIENCE'S,** This is the best version to date. **DOMINOS,** Play vs the computer or another player.
☐X **1977 POM POM GUNNER** Shoot down the incoming world war II air planes in this Operation Wolf game
☐ **2018 JETMAN** Another Spectrum classic converted to the amiga. It's JetPak with all the original sounds.
☐X **2022 SEA LANCE** The first Silent Service type sub war game on PD
☐X **2054 ATIC ATAC** A rendition of the game from the original Spectrum computer. Graphic Maze adventure
☐X **2162 BATTLE OF BRITIAN WAR GAME** 2 Strategy war games which both need loading through Wb.
☐X **2164 DUNGEON ON NADROJ** This is the best Dungeons & Dragons Public domain type game
☐ **2173 CARD GAMES,** Various card games titled Cribbage, Blue Moon, King, Patience & Hearts.
☐X **2178 SURVIVOR** A space based adveture game within the Aliens theme. Nice colourfull graphics
☐X **2180 SKODA CHALLENGE** An excellect 4 player hotRod game written in Amos. Simple but good fun.
☐X **2199 PARACHUTE JOUST** You are falling down to earth. & must take the Parachute from the other player.
☐X **2220 STRATEGIC GAMES** Eternal Rome, Lords of Hosts, In Moonshine. An Excellent collection of games.
☐X **2221 MIND GAMES 21** of the best Mind games to challenge your mind not your shooting skills.
☐ **2224 SWORD OF THE WAR LOCK** A Bards tales / Eye of the Beholder adventure game pocked on three disks Shareware **(3) 1Mb (2 Drives)**
☐X **2272 BLACK JACK LAB** Play Pontoon upto 7 Players. The computer plays banker. All popular versions.
☐X **2278 CARD SHARP** A very professionally presented selection of solitaire type card games. Excellent.
☐X **2279 SUB ATTACK v1.0** Control the torpedoes & sink the enemy ships as they sail past. **LANDMINE.**
☐X **2280 DIPLOMACY v2.0** Classic strategy game loosely based on World War 1. A very detailed game.
☐X **2313 REVENGE OF THE MUTANT CAMELS** By Jeff Minter The ride of a life time with mutant camels
☐X **2396 PETERS QUEST** This is truly an excellent platform game for the Amiga. Reccomended By all
☐X **2411 TOTAL WAR** The board game RISK as reviewed in Amiga Format, An excellent production.
☐X **2432 GOLDEN OLDIES** Galaga, Galaxians, Space invaders, Aster-iods, Batty & Missle Command.
☐X **2447 AMOS COINDROP FRUIT MACHINE** Excellent simulator with various gamble modes. Great fun...
☐X **2448 CRAZY SUE** This is another first rate platform game. You control a cute little school girl.
☐X **2450 SMASH TV - THE RIP OFF** Simular to the original arcade machine. With neat grapgics & sound
☐X **2480 AMOS FRUIT MACHINE II** As near as possible to the fruit machine found in Pubs & Arcades.
☐X **2481 AMI MORIA v3.0** This is the latest update to the Original Moria adventure game. Better graphics, & the largest adventure to date.
☐X **2482 DESCENDER** is a clone of the classic arcade game Tempest complete with vectorized graphics.
☐X **2483 INTRUDER** is a Multi level Berserk clone which features smooth gameplay, great graphics & sound.
☐X **2484 CATACOMB v1.7** A graphical adventure game set on a small island in the middle of the land of EXOUSIA. Your quest is to discover secrets & treasures of this under-ground maze **NEW UPDATED VERSION**
☐X **2485 IRON CLADS** (1Mb) This is another update to the excellent Strategic War Game **(2)**
☐X **2487 CLASH OF THE EMPIRES** (1Mb) Another excellent Strategical War Game By T.A.Sear. **(2)**
☐X **2489 COLOSSAL CAVE v1.0** is virtually identical to the original classic.
☐X **2490 RUMMY** Graphical Game
☐X **2491 LEGEND OF LOTHIAN v1.02** is an adventure game in the vein of the Ultima game series. Includes colourful graphics, Hordes of monsters and puzzles to solve.
☐X **2494 BATTLEMENTS - HUNCHBACK** This is a conversion of the old classic game. Excellent
☐X **2498 AMOS CRICKET** An excellent arcade cricket simulator with neat colourful graphics.
☐X **2535 SUPER PACK MAN 92** This is the best Pack man to date with super smooth scrolling and excellent graphics. Playable & Addictive.
☐X **2550 E-TYPE** Asteriods space adventure where you jet around collecting new weapons.

AMOS & FRED FISH DISKS

☐X **APD151 UNDERSTANDING AMOS** The Amos Tutorial Program Disk. A must
☐X **F572 MULTIPLOT v1.1** One of the most powerful data plotting packages available.
☐X **F580 WORLD DATABANK v2.2** Using a data base from the CIA, this program will plot world maps.
☐X **F631 AHDM v3.00a** Hard disk menu system offers a sixteen page menu, each page having upto ten possible actions. Just double click on the option.
☐X **F652 ELEMENTS v3.0** A very nice interactive display of the Periodic Table of Elements.

CLIP ART COLLECTION

☐X **CA1 CLIP-IT PACK 1 (5)** Sports, Flags, Animals, car-toons, Humorous, Xmas, Jewish, borders, Hallo-ween, valentines, eyes, alphabets, hands, zodiac,cars & more
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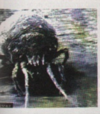
PUBLIC DOMAIN PDSCENE

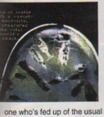
PD expert, Steve Keen, once again scours the hundreds of new PD disks in search of the wild, wacky, and fun. Here's what he found this month...

THE INVISIBLE WORLD 2

slideshow

Here's the second in an intriguing series of disks which provide a startling insight into the world of microscopic photography. The hard part, actually magnifying the subjects, was obviously done by someone else unless the crew have got access to a £15,000 electron microscope. This same gent was probably also responsible for the pictures taken from the book of the same name. However, the twenty or so pictures enable you to see some incredible features on everyday objects and organisms that you'd never have believed existed. Tiny mites which feed on mascara and live at the roots of your eye lashes or the tip of a ball point pen. All the pictures are accompanied by fascinating captions and for anyone who's fed up of the usual pop star and cartoon slideshows this is a welcome relief.





Disk no: Invisible World (Plus compatible) Available from: Digital Access, 6 Stubbing Brink, Hebden Bridge, West Yorkshire, England HX7 6LR Price: £1.50 (including P&P) Tel: 0422 844215

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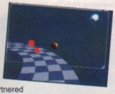
Welcome to the Public Domain where there's a wealth of free software available for your Amiga – often as good as, if not better than, a lot of full-price commercial programs. For the price of a disk and a little money to cover such things as postage and packing, you can take your pick from a stack of great games, utilities, demos, animations and applications.

The origins of Public Domain go back to the early days of computing when groups of enthusiasts would get together and create original programs of their own. These they would distribute freely between friends to garner recognition for their coding skills. Nowadays, the PD scene has grown into a thriving industry with countless PD libraries serving an ever-growing number of enthusiasts. Standards are rising all the time. PD Scene is here to make your purchasing decisions that much easier as we individually rate all the best new releases as well as provide details of the full cost of each disk (including postage and packing) and the address of where to send your cheques/postal orders. Don't just sit there, start writing those cheques now!

ANDROMEDA

demo

Quite a weird little program this, consisting of a series of rather short demo routines running around the Amiga screen. The program adjusts the size of the screen to fit the requirements of the demo currently scrolling along, partnered by vector objects. The effect is somewhat spoiled by the unnecessary greetings which are superimposed across the screen and obscure the demos, though. Just when you think all is lost and it's going to fall apart the screen crumbles away to reveal an excellent rendition of 3D vector machinery, featuring a series of cogs and balls that scroll across the screen reflecting light and shadow off one another. Not bad, but far from brilliant and certainly nothing original.



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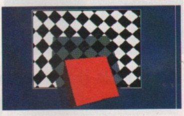
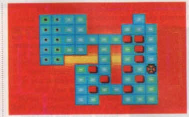
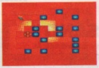




NOVA AND DOG

games

Two games of exactly the same themes and difficulty. There appears to be just one level per game, but they're guaranteed to take you ages to solve. The idea is to cover a series of dots on one side of the screen with pucks that are pushed around with a cursor. The cursor can only move one puck at a time and some real thought is needed before you take a turn as one mistake and you'll never be able to complete the whole puzzle. *Nova* is the bigger and therefore the harder of the two, but then again we haven't been able to complete either of them. The programmer would like anyone who does manage to complete either of the games to write to him in the States and tell him exactly how long it took. My suspicion is that the only correspondence he'll receive before next year will be Christmas cards!



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HELLRAISER 1&2

slideshow

In the light of our 'Points Of View' article last month, Messrs Andy Strachan and Andy Gibson's latest disk could soon be very illegal indeed. Agas have a distinguished reputation for quality slideshows and these pictures taken from the Hellraiser films are a lot clearer than the animation we featured last month. None are particularly gory, but there's a fair cross section of stills of the starring Cenobites and other blood-smeared monsters to keep fans amused.

Disk no: Hellraiser 1+2 (Plus compatible) **Available from: Deltrax PD, 36 Bodelwyddan Avenue, Clwyd, LL29 9NP Price: £1.50 (including P&P)**

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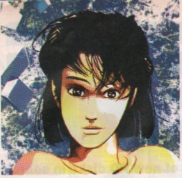
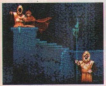
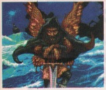


ALCATRAZ MUSEUM

slideshow

This Alcatraz slideshow consists of twenty stunning hand-drawn colour pictures which, at the very least, will have you grasping for your mouse and a copy of *DPaint* to see if you can do better. There's no particular theme, but some are a bit weird to say the least. Particularly good are the renderings of the beast from the fantasy film Legend and the cartoon styled pictures.





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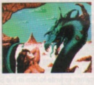
SANITY

artwork



If you're into PD in a big way you'll know that full-time professional demo crews like nothing better than to organise parties. Far from being lame affairs, these gatherings bring together hundreds of like-minded people to hold discussions on future projects, show their latest works, demonstrate techniques, hold competitions and listen to music demos. One of the most popular aspects of these highly organised affairs is the graphics competitions and here, on this disk, we have the ten best that were entered at the Crusaders Deadline Party '92. Every picture is an original hand-drawn affair and, although the disk gives no indication as to who won, I'm glad I wasn't the judge as most are fabulous. See how the experts do it.

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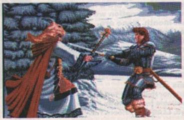

BALDY

games

Definitely one of the saddest games I've ever played within these PD pages. This platform game possess as much addictive appeal as a packet of razor-backed pig flavoured crisps has to a practising rabbi. You control an aging geriatric as he bounds about a single screen-hopping from platform to platform dogging arrows and collecting computer disks. The hairless ones opposition remains virtually the same throughout most of the levels and the abysmal rudimentary graphics are appalling. Just to seal the game's fate the old timer's control system is extremely temperamental much to the game's and your character's loss. He shows as much athletic prowess as Oliver Reed working out in a Jack Daniel's factory. Invest in something else or save your money.

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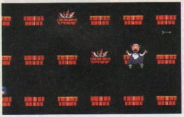

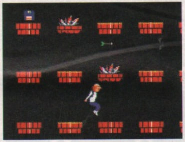

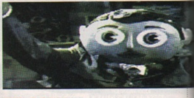

FRANK SIDEBOTTOM'S FANTASTIC SHED SHOW

slideshow

In case you haven't heard of Frank Sidebottom he's an alternative comic who gets by on a little talent and wearing a massive papier mache head. He's quite famous amongst trendy student types and Working Men's Clubs, but now, with a PD computer slideshow all to himself he's really hit the big time. There's not a lot of humour to be found on the disk, unless you reap great mirth from viewing Frank's head from different camera angles – very boring stuff. If anything was guaranteed to make you want to cave in your monitor in desperation, captions such as 'Frank about to sing wild thing' and 'Frank singing Wild thing' are just the ones to do it. Get him off!

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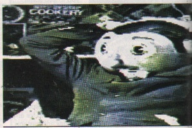
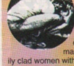


CRY FOR DAWN

slideshow



Cry For Dawn is a rather obscure American horror magazine. From what I can gather from the pictures included on this disk, the magazine tries to target the seedier side of the horror/fantasy forum. Certainly amongst this collection of digitised hand drawn pencil images the main theme tends to be scantily clad women with a taste for the satanic. Still, when it boils down to it, the artwork is superb and whatever your views on adult comics and fantasy erotica it's hard not to admire the artists imagination and skill. I'm a fan of nearly all styles of fantasy artwork, and there's no reason why this shouldn't be in the genre.

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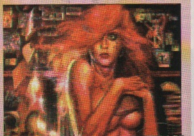

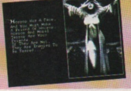

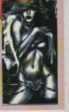

TAKE A CHANCE ON ME

music demo

It's unusual for the Two Toms to have been so quite on the sampling front. With recent events and the crack down on samplers it was feared they'd given up altogether. However, they're back as bold as brass with Erasure's latest version of the Abba classic. Great quality as usual and the weirdest accompanying picture they've used yet. We've yet to see anything from them with a bit of thumping guitar, but perhaps they'll do a Guns N' Roses rip-off next.

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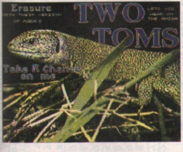

GRAPEVINE 10

magazine

Issue 10 of probably the finest disk-based magazine in the country has just reached us. What sets Grapevine apart from the others is that it doesn't take itself too seriously and you're bound to find something of interest in its hundreds of pages. Also it's very easy to go straight to the parts you want to read thanks to an extremely fast location system. Amongst this issue's articles are a feature on fax machine viruses, a preview of Evil Dead III coupled with a list of banned movies, fictional and fantasy articles and loads of other stuff for serious coders to casual browsers. The usual party news and invitations are also well represented and there's also news about forthcoming horror, computer and fantasy events. Whatever your interest the three disks are a lot of fun and there's some genuinely hilarious stuff to flick through.

Disk no: GV1, 2+3 (Plus compatible) Available from: Software Sanctuary, Station House, Llanelly Hill, Waunavon, Nr Abergavenny, Gwent, NP7 0PU Price: £1.25 per disk (including 50 P&P) Tel: 0495 790930

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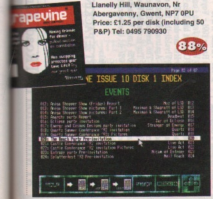
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ROLLING 1+2

music demo

Two disks incorporating seven brilliantly clear tracks and melodic tunes that can be faded in and out of with a click of the mouse button. What's extra special about this disk, however, are the incredibly presented animated icons that have to be accessed to make the tracks play. If you buy this disk make sure that you purchase an icon creator at the same time because when you see how cleverly these ones have been put together you'll be dying to try and create your own. The animated girl that sits in the corner of the workbench screen waving her legs in time to the music is a bit to 'eu naturelle' to be shown here but she's definitely worth checking out.

Disk no: 2002A+B Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

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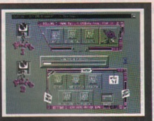

TECHNO POWER

music

Now this is what we like. A bit of ingenuity worked into an old theme. Paradise's demo utilises four techno tracks held on 'video' tapes at the edge of the screen. Once you've selected the track you want to hear the tape flies out of the pile and twists through the air before landing slam dunk style in the player. The screen then cuts to a 'video' computer graphic show that matches the tempo and style of the music being played. Each one uses a few of the same graphics but fundamentally they're all different. The tracks are pretty good, too. Original stuff that seems to be all too lacking in most works at the moment.

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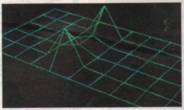

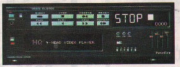

50 GREAT GAMES

games

Keeping up their policy of releasing huge PD games compilations, Fortiss PD have collected together another giant amalgamation of classics from past and present. There are three disks in this collection, but all can be bought separately. I wasn't as impressed as I was with the boxed set released recently, which possess an amazing amount of quality stuff, as this release contains more than its fair share of flops. Some games don't even bother coming out of the Workbench screen and run with it behind them. However, amongst those worth mentioning are the super *Alien Fight*, *Mouse Walk* and *Space Raiders* and I'm sure you'll agree that you can't really go far wrong with a compilation comprising fifty games. Be warned though, not all the items are plus compatible, so check with the PD company first.

Disk no: 321A,B+C (Plus compatible) Available from: Fortiss PD, PO Box 2, Earl Shilton, Leicester, LE9 8LU Price: £1.50 (including P&P)

79%

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A-Animation S-Sound U-Utility G-Game M-Miscellaneous S-Slideshow

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4. **HELLBOUND A**
5. **SWEET REVENGE A**
6. **E-TYPE G**
7. **AMY WALKS A**
8. **NEW SUPER KILLERS U**
9. **PICTURESQUE U**
10. **COPPER G**

Compiled by CU Amiga

PLEASE NOTE: Some releases come on more than one disk so please take note of the exact cost of each program before sending off any cheques or postal orders. A quick phone call will also confirm whether the disks are A500+ compatible or not.

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1101	Llamatrons (W/B)
1105	Grand Prix Sim
1123	E-Type (P)
1126	Survivor Ver 2 (P)
1128	Storyland 2 (P)
1129	Doody (P)
1131	Truchin On* (2D) (P)
1135	Escape (P)
1138	Crazy Sue

GRAPHICS & ANIMATIONS

2031	Elgato* (Cat Anim) (P)
2040	Tron* (2D) (P)
2069	Real Things Birds* (P)
2077	Rock Album (Slideshow) (P)
2089	Madonna Cartoon*
2098	The Frog Animations* (P)
1110	Juggette 2* (P)
1124	At The Movies (1.5Mb) (P)
2162	At The Movies2* (4D) (P)
2181	At The Beach (3Mb) (2D) (P)
2188	Beach Flight 1 & 2* (P)
2193	6 Of 1 (The Prisoner) (P)
2197	Sweet Revenge (1.5Mb) (P)

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4070	Amibase 3.76 (P)
4087	CManual V2.0 (4D) (P)
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4102	MessySid 11 (P)
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4109	BBase 11 V5.32 (P)
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DEMOS

6010	Hunter (playable demo)
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6055	Magic Roundabout
6059	Inianapolis 500 Demo (P)
6065	Pink Floyd The Wall* (6D)
6072	Ray Of Hope 2
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PUBLIC DOMAIN

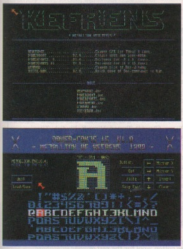
PD UTILITIES

POWERMENU
menu creator

Nothing rounds off a good compilation disk better than a nice menu. The trouble is the damned things take so long to create and, unless you can program, you're normally stuck with CLI-based menus. Many programmers have realised this and, as a consequence, there are now a number of menu-creation programs available, of which *Powermenu* is one of the easiest to use, letting you create mouse-driven menus in next to no time.

The program itself runs from CLI, and can of course be incorporated into a startup-sequence for auto-booting. Menus are created as standard text files using a word processor. These files are then converted into on-screen menus, complete with scrolling star fields and highlighted text. You can also alter both the text colours and the fonts used to display it via additional options whenever *Powermenu* is activated.

Quite a handy little program, and an ideal way for novice users to learn a little more about disk compiling.



Having created your menu via any text editor, these can then be converted on-screen.

Disk No: U216.
From: Select PD, 79 South Road, Sully, South Glamorgan, South Wales, CF6 2SL.
Tel: 0222 530461.
Price: £1.49 Inc P&P.
Compatibility: Any Amiga (the intro isn't 2.0 compatible, though).
Memory: 512k.

70%

Mat Broomfield presents an identification parade of the meanest utilities to hit PD town.

BENCHMASTER
replacement workbench

utility of THE MONTH

Although PC owners are only just discovering the joys of *Windows*, Amiga Workbench users have long realised that it's not the be all and end all of user interfaces. There have been many attempts to improve the basic concept with programs such as *Windowsbench* and *Radbench* among the better ones. Now, at long last, someone's finally come up with a version that seems to have everything.

Benchmaster loads on all Amigas and, whilst it's loading, you're given the opportunity to mount a PC drive. This means that one of your drives will be configured so that it can also read and write to PC disks. Once *Benchmaster* has loaded, a more or less normal Workbench screen appears, although it has been designed to have that Workbench 2 look, even on non 2.0 Amigas.

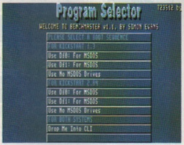
A quick glance around the screen will reveal that *SID 1.06* has also been loaded, along with a program called *Shortcut*. At the bottom of the screen, a Shell window is also opened ready for use. Glimpse at the top right-hand corner of the screen and you'll notice not one, but two, RAM Disk icons. The extra one is in fact a RAD disk, which works in the same way as a normal RAM disk, but its contents are not lost when you perform a soft reset.

Returning to *Shortcut*, its small menu bar completely belies the superb power of the program, for it is this above all else, that makes *Benchmaster* so incredibly flexible and useful. When *Shortcut* is activated by clicking on its menu bar, four menus become available at the top of the screen. Between them, they give you access to all the most frequently-used Workbench and CLI options, and a lot more besides.

System is the first menu, and it lets you load *SID*, *DMouse*, *Iconmaster*, *Setkey* and a number of other valuable programs. *DMouse*, for example, turbo-charges the mouse cursor, and activates automatic screen blanking to protect your TV or monitor screen from phosphor burns. The File menu contains options to look at ASCII files, as well as IFF pictures and Anims. It even contains a *Soundtracker*-compatible module player.

Options such as Install, Format and Copy, are contained in the Disk menu, which also contains a disk editor, and gives you a further opportunity to mount PC compatible drives. The final menu contains the utilities that almost everyone uses. Stuff like *Text Edit*, *Powerpacker*, *Virus Checker* and *Multi-Ripper* (for ripping text, graphics and music data from games and demos).

Although the disk takes even longer than the usual Workbench to load, it's well worth the wait, and it's certainly the ultimate Workbench replacement program.

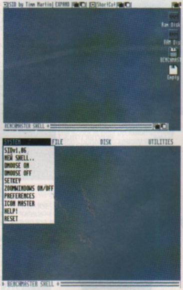


Program Selector

WELCOME TO BENCHMASTER v1.1, BY SIMON EVANS

PLEASE SELECT A BOOT SEQUENCE
FOR KICKSTART 1.3
Use Df0: For MSDOS
Use Df1: For MSDOS
Use No MSDOS Drives
FOR KICKSTART 2.04
Use Df0: For MSDOS
Use Df1: For MSDOS
Use No MSDOS Drives
FOR BOTH SYSTEMS
Drop Me Into CLI

The ever-useful *Benchmaster* lets you read and write on PC disks from the Workbench.



Shortcut is the heart of *Benchmaster*. Its menus are packed with the programs that every serious Amiga owner should own.

Disk No: U701.
From: NBS, 1 Chain Lane, Newport, Isle of Wight, PO30 5QA.
Tel: 0983 529594. Price: £1.75 Inc P&P.
Compatibility: Any Amiga.
Memory: 512K

90%

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+1923	Dir Work (file handler)
+1926	MED 3.21
1893	KREST MASS OVERLODE
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+1901	PURITY TEST (18)
+1895	BOOTBLOCK GENERATOR
+1907	COPPER (GREAT GAME)
+1909	FREE PAINT
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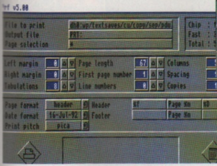
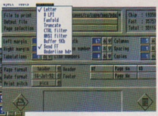


File to print: dh0:wp/textsaves/cu/copy/sep/pdu
Output file: PRT:
Page selection: *
Left margin: 0
Right margin: 0
Tabulations: 8
Page length: 67
First page number: 1
Line numbers: 0
Columns
Spacing
Copies
Page format: header
Date format: 16-Jul-92
Print pitch: pica
Header: %f Page %n %D
Footer: Page %n

As it is solely dedicated to printing text, *APRF* is far more flexible in this regard than any other text editor or word processor.



Chip : 19358
Fast : 35757
Total : 55115
Columns: 5
Spacing: 1
Copies: 1

APRF has the slick 2.0 look or commercial WPs, such as *Wordworth.*

If you do a lot of word processing or text printing, regardless of the software you use, there's bound to have been a time when your WP package fell short of your requirements. Most word processors have nice justification abilities, but ask them to columnate your text and, metaphorically-speaking, they lay on their backs waving their legs in the air!

APRF attempts to remedy this problem by providing a variety of text printing options that don't come with your average package. The program runs from CLI or Workbench, and although it's extremely easy to use, the sheer quantity of options may seem a little overwhelming at first. To use it, simply type:

APrf textfilename [options]

substituting the required option codes where I've written the word 'options'. There are 26 different formatting commands, ranging from obvious stuff like margin settings and the number of lines per page, to more interesting stuff such as headers/footers, date insertion and multi-column formatting. The latter option lets you take an ordinary ASCII file and output it in up to 999(!) columns as seen in, say, a newspaper. In practice, the highest number you will need is five, but it's nice to see higher figures supported so that the program is practical for owners of 132 column printers too.

APRF is also ARexx-compatible, so if you use it regularly for large scale formatting, much of the work can be automated for you. In addition, *SID* could use this instead of the default printing program, and I'm sure that it would be much easier to use if activated in this way. If you care about the way your text reaches the page, this could be just what you need, especially if your word processor isn't up to much.

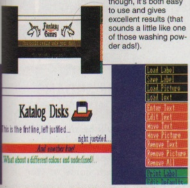
Disk No: UT143.
From Roberta Smith DTP, 190 Falloden Way, London, NW11 6JE.
Tel: 081 455 1626.
Price: £1.30 Inc P&P.
Compatibility: All Amigas.
Memory: 512K.

75%

LABEL MAKER 1.5

disk label maker

Whenever you look into your disk box, do you see dozens of disks each sporting barely legible, handwritten labels? If the answer is yes, and you have a printer, this program is definitely for you. *Label Maker* helps you to create smart disk labels, each containing multiple lines of text, and optional graphics. Unlike previous labelling programs, though, it's both easy to use and gives excellent results (that sounds a little like one of those washing powder ads!).



Label Maker is extremely straightforward, and even lets the user combine IFF graphics with text written in any Amiga font.

The program is controlled via a strip of gadgets running down the right-hand side of the screen, and although there seems to be quite a few of them, they all fall into four categories: text, graphics, printing and defaults.

The text and graphics options simply let you add and position titles and illustrations on the disk label. There are a number of graphics provided, and in text mode, you can use any Amiga font at virtually any size. Having decided on a picture, or piece of text to include, the program treats your choice as a brush, which can be positioned anywhere on the label.

Label Maker is ideally suited towards printing on labels that come on continuous rolls and are tractor fed through your printer, but it will work with single sheets of sticky or plain paper as well. It lets you define the spacing between labels in thousandths of an inch, and therefore ensures that the positioning of your text and graphics is really precise. I can wholeheartedly recommend this program to anyone that doesn't own a Desktop Publishing package because it really takes the work out of creating nice labels.

Disk No: U142.
From Ground Zero PD, 4 Chandos Road, Redland, Bristol, BS6 6PE.
Tel: 0272 732978. Price: £1.40 inc P&P.
Compatibility: All Amigas.
Memory: 512k

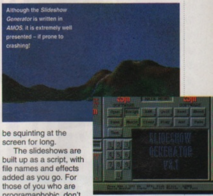
85%

SLIDESHOW GENERATOR 3.1

demo maker

AMOS is an incredibly powerful and versatile language – however, on the down side, most programs written with it look rather too similar in appearance. *The Slideshow Generator* is an exception, because not only is it extremely easy to use, it looks and feels every bit like a commercial product.

The idea of the program, is to let people with little or no programming knowledge, create their own picture slideshow, complete with music and flashy wipe effects. The program comes with instructions built in, but due to their ill-considered colour scheme (red on black), they're rather a strain to read. Fortunately, because the program's so easy to use, the instructions are very brief and you won't be squinting at the screen for long.



Although the *Slideshow Generator* is written in *AMOS*, it is extremely well presented – if prone to crashing!

The slideshows are built up as a script, with file names and effects added as you go. For those of you who are programaphobic, don't worry, you don't actually have to type anything in – heaven forbid! The script is built up automatically by clicking on various buttons to specify which screens should be loaded and in which order they should be displayed. There are nine different fade/dissolve effects that can be used on each screen, and these are chosen by clicking on one of the numbered buttons to the left of the all-important main window.

When you think that the slideshow is set up correctly, you can click on the Test button to have a look at the results. Alternately, you can load any *Soundtracker*-compatible module so that there's some music to accompany your efforts. All modules are converted into the program's own format before being used, but as this is automatic, that's no problem. When you've set everything up to your satisfaction, the entire production can be saved to disk as an auto-booting slide show.

To be honest, as good as this program is, it tends to crash if you make the tiniest little mistake. This is a shame because it makes it very frustrating to use. However, weigh that against the program's simplicity, and perhaps it's not so bad.

Disk No: 1804.
From: 17 Bit software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH.
Tel: 0924 366982.
Price: £1.50 Inc P&P.
Compatibility: Any Amiga. Memory: Any machine, but 1Mb needed if using music and hi-res screens.

70%

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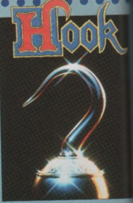

HOOK

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You'll be shakin', rattlin', and rollin', when the spikes, monsters and ghosts come at you, in this spooky, loopy game. As Gomez you must save

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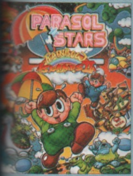
orticia, Lurch, Granny, gsley and Wednesday om the treacherous ally Alford.



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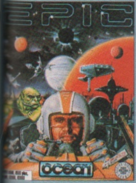
AINBOW ISLANDS 2)

et ready for some nger-searing action as ub and Bob blast their ay onto your computer reen. Use the elements f fire, water and ghtening to overcome ave upon wave of little asties-as you attempt to nlock the secret of arasol Stars.



PIC

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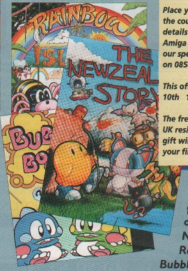

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"(The Midnight Oil) treat soccer in the sophisticated way Americans treat their national games." **-The Guardian**

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SKILLS All players have a balance of 5 skills (no "skill levels") which you must develop by experimenting with your team. Even more important will be your judgement about the effect of the particular team balance or skill combination on the outcome of the match, and subsequently a season of football. Suitable training can develop/enhance skills.

MATCH/STATS Your judgement will be put to the test in this unique 4 minute match/stats simulation against accurately simulated opposition. This is the measure of your team and your most reliable source of information. There are displays of: match flow, two teams, player-with-the-ball, injuries, discipline, substitutions, in-match tactics, goal scorers, possession breakdown and performance assessment.

REVISION ONE

The best just got better! All updates that have been made to Division One 92 over the last six months. In addition the match screen has improved, opposition team info expanded, a European transfer market added and a few more minor changes. An edit program and a customisation program have also been added. The manual has been expanded and the packaging improved.

EDIT PROGRAM. Edit the team and players that make up Division One. Produce **your own** Division One, or Scottish League, British League, European League, German/Spanish/French/Italian...etc...etc. Or even make up a league of all the best teams you've ever seen.

CUSTOMISATION PROGRAM Customise the 45 man starting squad. Use your own favourite players, or your local side. How about as squad with Pele, Beckenbauer, Best, Cruyff, Maradonna ....?

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Division One 92 transforms the soccer management game. You can concentrate on the football. Experiment with players, formations, team styles. Build your dream squad and check it out in accurately simulated league/cup football. Match results are from a unique soccer match. Every pass, tackle, shot etc. is determined by the players involved. Your choice of skills thus influences match results. Mental arithmetic has been dumped. Football knowledge is the name of the game.

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contents...

148 HARD DRIVE BUYER'S GUIDE

The CU Amiga team have been hard at work to bring you the ultimate buyer's guide to one of the most important add-ons a computer user can purchase. If you're thinking of buying a hard drive then look no further.

154 INSIDE INFORMATION

Inside Info gets a lick of paint as it's miraculously transformed into an industry scandal sheet. Yes, if you want to know about the low-down, darn-right dastardly dealings and doings of the computer biz, this is the only column worth reading.

156 COMMS

Diddy Dave Burns gets on the blower with his latest comms column. This month, the man with the modem goes global in his quest for the perfect networking system. If you want to know more about networking, look no further.

159 BACKCHAT

If you've got a gripe or simply want to get something off your chest, Backchat is your chance to let off some steam. Each month, we present a choice selection of letters from our many readers, guaranteed to stir up controversy in the Amiga world.

162 EDUCATION

With the support of Education Otherwise, you no longer have to send your kids to school for an education. Mike Gerrard takes a look at one couple who took their son out of full-time education and now teach him at home, with a helping hand from the Amiga.

164 HELPLINE

The only tips pages worth reading is relocated to the blues and is absolutely chocabloc with all the latest hints and cheats to make your gaming days that much easier. Plus, there's the added bonus of Small Tips, where we feature a whole host of cheats to all the new full-price and budget releases.

166 QUESTIONS & ANSWERS

All your problems have an answer and Mat Broomfield is on hand to provide them. So, if you're stuck on which accelerator board to buy or don't know your Scart socket from your serial interface, Mat's got the answer.

170 OCTAMED PRO

Once more, Mat Broomfield ventures forth into the world that is *OctaMED Pro* to provide another excellent tutorial based around the latest release of this excellent music program. All part of our continued support for our stunning coverdisks.

174 MUSIC COLUMN

Tony Horgan is your guide as this month the musical maestro shows how to inject a bit of creativity into your sampling. It's all very well ripping off other people's bass lines, but transforming them into an original score takes time and a large amount of talent. Here's how it's done.

177 NEXT MONTH

If you want a completely unreliable guide to what to expect in next month's issue, then here's the place to look. If, on the other hand, you want some cast iron guarantees, may we humbly suggest you write a couple of suggestions on a scrap of paper, as you've probably got as much chance of getting it right as we ever do!

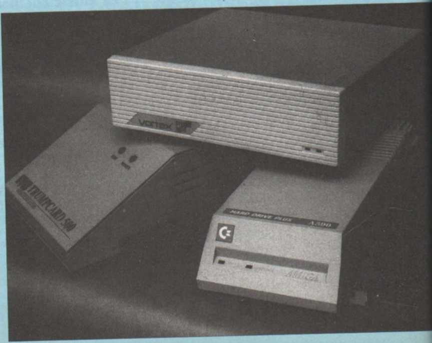
178 POINTS OF VIEW

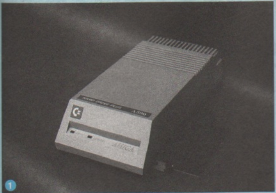
Ahoy, me hearties! With piracy as rife as ever – if not more so – and car boot dealers making thousands of pounds out of ripped-off software, Steve Keen assesses the chances of the commercial software houses beating the hackers. Is the computer industry doomed, or is it a problem that's been blown out of all proportion? Also, just how good are the industry overseers, FAST and ELSPA when it comes to cracking down on such pirates – and do they offer the companies supporting them good value for money?

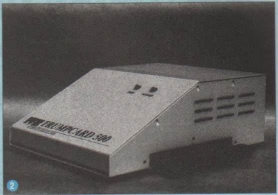
hard drive round-up

PART 1

Buying a hard drive is one of the most important decisions you're likely to make. Although they will speed up your efficiency, negate the need for irritating floppy usage, AND allow you to play a decent game of *Monkey Island II*, they do cost a lot, and making the wrong buying decision can be fatal. However, here to rescue you from wasting your cash, are CU's hardened team of hard drive users with their useful words of advice...







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COMMODORE A590

A lot has been said about the A590, most of it bad. It's noisy, it's slow, it needs a big power supply and it doesn't have a through port. Well, that's not quite true. The A590 on the shelves these days is actually an updated A590Plus. The difference is a redesigned interface giving better access times from the on-board XT drive. The fan still makes a noise, though. The 590, it is true, does not have a through port. It is difficult to imagine what else would be plugged onto the expansion port other than a hard drive or a RAM expansion, though. RAM expansions usually come with a through port so this shouldn't be a problem.

In the expandability stakes, the A590 does offer connectors for both SCSI and XT external drives. The SCSI port hangs neatly out the rear of the unit whereas there is an internal connector for any XT devices you may come across. Internally, there is also room for 2Mb of RAM, which is enough for a decent system. If you want to expand more than that you are much better off with a standalone unit like the Cortex. The lack of a through port is basically down to electronic noise levels – it's a tough thing to implement an error free data bus on a device with two large motors in it. This isn't as bad as many people seem to imagine – most people only want to attach a hard drive. Any hard drive should have its own power supply, but some of them seem to work quite happily without. The A500 will not be able to power up if an unsupplied A590 is connected, which is quite sensible. Actually, you can leave power connected to the A590 continually and it will only spring to life when you switch on the A500. The only real problem with it is its size – it fits in the same style mega-case that the A500 power supply comes in. And with only a relatively tiny 20Mb mechanism the drive is a bit small.

Once you have installed all your workbench stuff – *DPaint*, *ProPage*, *SID* and a Word Processor – there isn't much room for a lot of actual work. Style-wise about all you can say for the A590 is that it's the right colour. It's wide and high, with only a very minimal rake on the front which makes it look a little incongruous.

The obvious advantage of the 590 is that this is a Commodore product and so you should (theoretically) rest assured that it will be 100% compatible with any other Commodore approved peripherals. It is definitely the most reliable drive so far. The test model has never failed in two years of heavy use.

Rating: 7/10
Size: 20Mb
Price: £299
RAM: 1 or 2Mb upgrade
Through port: No
Disable switch: No
SCSI Controller: 6 external SCSI drives
XT Controller: 2 internal/external XT drives
IDE controller: No
Supplier: Silica Systems (081) 309 1111

②

ICD TRUMPCARD

The Trumpcard for the A500 is now getting on in years, although when first available it never really got the recognition it so rightfully deserved. In direct competition with the ubiquitous A590, it was priced slightly higher, but always provided that little bit more in the way of performance.

As far as I know, Trumpcard is still unique in the way in which it provides complete compatability with the A500 as well as the A1500/2000. Inside the rather uninspiring pressed steel box, lies a little bonus – a A500 edge connector to an A2000 expansion bus converter. For A500 owners the Trumpcard interface slots into this adapter or, if removed from the beige box, plugs directly into a Zorro slot on the bigger Amiga's motherboard. In this way it is ideal for A500 owners dithering over that upgrade (Checkmate A1500 owners will probably be able to concoct a method for internal fitting – for me it was acceptable to have the drive hanging off the side, supported with an abandoned mouse mat).

Against the A590, the Trumpcard always offered that little bit more. It supports SCSI (where the first A590's were XT), it can support up to 4Mb of expansion Fast RAM (where the A590 has 2Mb) and it comes with a 32Mb ST128N Seagate drive –12Mb more than the A590. Speed is certainly of the same order of magnitude, and is therefore perfectly acceptable. The Trumpcard's interface also manages to support mixed partitions, in that as well as Amiga DOS partitions, PC and Mac emulators may be provided with partitions of their own. Supplied software is more than adequate, with TCUtils providing all the setting up options that could ever be required. All hard disk utilities tested (*Quarterback*, *Bad*, *Disk Mechanic*) worked fine.

There are a few drawbacks though. Any further SCSI connections require a little DIY work – no connector is present, just holes on the circuit board and if you want to add any RAM you'll have to buy a rather expensive RAM board first. There are a few quirks of incompatibility, as with the Dataflyer unit. For example. the drive continually fails if an SSL A5000 accelerator is used on the host computer. The unit comes without an external power supply, and although some Amigas don't seem to need one, a 12 and 5 volt supply is heartily recommended. As for the unit's reliability, the test model is broken. After three years of trouble-free everyday use, a friend with rubber-soled shoes and a nylon carpet shuffled over and gave it a severe zap of static electricity. However with another interface card (for £80 – good value) the drive will probably run again for several more years.

Rating: 5/10
Size: 40Mb
Price: £499
RAM: Option
Through port: No
Disable switch: No
SCSI Controller: No socket
XT Controller: No
IDE controller: No
Supplier: First Choice (0532) 637988

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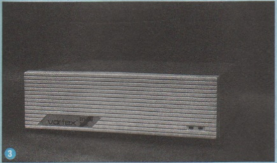
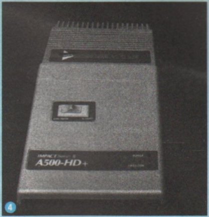
hard drive round up





③

VORTEX SYSTEM 2000

You don't see too many of these drives around any more, and not without good reason. The initial concept was great: the drive and the interface came in two boxes. This meant that for a start you could place the drive up to a metre away from your base unit and, secondly, the drives could be cheaper. The actual interface cards were specific to an individual machine (Atari, Amiga, etc.) but the drive units were generic making them that bit cheaper. The drives themselves were 40Mb jobs, but you could be fooled into thinking it was bigger given the size of the box. At roughly twice the size of an A590 the unit did include an integral power supply and fan though (although inside that can it made a very irritating noise). The interface unit which connected to the Amiga was called a 'Personality Module'.

This was were the problem started on the Amiga. Firstly, the interface did not adhere to the Commodore AutoConfig standard. Instead it wrenched control from the system and initiated itself. This was good in that it meant the drive autobooted completely transparently from the system (even on older ROM versions) but it also meant it was beyond hope of resurrecting by any conventional device if the interface went wrong. Unfortunately this seemed to happen quite a lot. Some units were sturdy and robust in even the most inclement conditions, whilst others only needed a slight draft to waft over the interface and they went on a one way trip to guru land. Apparently that was because many of the units were made in this country under licence where, to cut costs and bring the price more in line with the German version, many components in the interface were replaced with cheaper alternatives. The test model was fine once it had booted up, but getting it to boot up took about four minutes on average. Another model would lock up every time the disk was accessed continually for too long – no big animations or 24-bit files.

In operation the drive was fairly fast and quite reliable, though there were a few instances when it seemed there was a bit of incompatibility trouble with other devices. The interface did have a useable through-port but the sticky feet on the bottom didn't last too long before they started coming unstuck. Later units were supposed to be more reliable and now come with a RAM option. Check where they came from before you buy one.

Rating: 5/10
Size: 40Mb
Price: £499
RAM: Option
Through port: Yes
Disable switch: No
SCSI Controller: No
XT Controller: No
IDE controller: No
Supplier: First Choice (0532) 637988

④

GVP IMPACT

For nearly two years now, the GVP Impact Series 2 hard drive has been the bench mark against which other A500 drives are compared. It plugs directly into the expansion port at the side of the Amiga, and has a built-in SCSI interface, which can be re-configured, so that additional SCSI devices can be used.

Although it was originally available only in 40-105 megabyte capacities, this range has now been increased to 52-240mb. Every drive uses a Quantum drive mechanism, which is noted primarily for its speed and reliability. When it comes to data transfer, the Impact series 2 goes like a hot knife through butter. The spec sheet that comes with it claims an optimum SCSI data transfer rate of 3.58 megs per second, but in real terms, the drive can read about 451k per second. That still means that a full 1Mb game can be loaded in only 2.3 seconds!

Another thing that really sets the Impact apart from other drives, is its expandability. It has internal space for up to 8Mb of SIMMs memory chips, which the Amiga treats as normal fast RAM. The only limitation is the fact that you must decide how much memory you're going to add before you start buying any. I know that this sound obvious, but the drive only has space for four SIMMs, and these can only be one or four meg chips. If you're going to expand to 4Mb, you'll need four 1x9 or 1x8 SIMMS, whereas an 8Mb expansion only uses two 4x8 SIMMS. You can't mix and match by adding one 4x8 and three 1x8 chips.

As is almost standard on all newer hard drives here is a disable switch. Many old (and even some new) games won't work with a hard-drive active on the expansion bus, and they are a bit of a pain to take off and put on again everytime you want to play your favourite game.

The Impact also has a special mini slot for adding additional internal peripherals, like a PC emulator or an '030 accelerator. On Kickstart 1.3/2.0 Amigas, the GVP will auto-boot, but in case of any possible compatibility problems, it can be switched off so that the computer boots normally. The GVP unit is probably the best selling hard drive for the Amiga and not without good reason. I've kept my eyes open for any potential rivals for this drive, and although the Roctec looks very promising, there's nothing else to touch it. The gap is sure to widen when the turbo version appears here very soon...

Rating: 9/10
Size: 52Mb
Price: £295
RAM: Optional 8Mb
Through port: No
Disable switch: Yes
SCSI Controller: Yes
XT Controller: No
IDE controller: No
Supplier: Silica (081) 309 1111

win a load of RUBBISH

Yes, that's right, you can win the entire contents of the CU offices – well, the useless stuff, anyway....

A SKIPFUL OF JUNK COULD BE YOURS!

We've run some good competitions in the past – with trips to the States or numerous Video Recorders on offer – but this one's really scraping the barrel (literally)! This is your chance to win all the junk that now infests the CU Amiga offices. That's right – pen a witty caption to the photo on this page, and all the rubbish that has accumulated in the office over the last couple of years could be yours. The reason for this madness? Well, we're getting rid of Steve 'Mary' Merrett and Steve 'Queenie' Keen, so we though the rest of the dead wood should go, too!

But don't scoff! This truly great prize includes some absolute gems. Not only could you walk away with Steve Keen's collection of vanity mirrors and Nick Veitch's handy supply of Doctor's notes, but there's some real bargains hidden beneath all the crap. For instance, tucked away in a dingy filing cabinet are more than 2,000 PD disks accumulated over the years, including all the games, demos and utilities we've featured in the mag – plus a lot more besides (sadly, Dan half-inched his prized collection of King's Cross 'Business Cards' before we could include those as well).

There's also a clapped out C64 that nobody wants anymore, a vast collection of computer game magazines, roughly 100 boxed games, broken tea-cups, CU Amiga T-shirts and a very fat and sad Publisher who nobody likes (who must remain nameless for legal reasons). We'll also throw in an assortment of joysticks, mice, books, videos and whatever else isn't bolted down to the floor or already carted off to Steve Merrett's flat.

So how can you get your hands on this skipful of rubbish? It's easy. Just write a witty caption to accompany the picture of our dashing Managing Editor, Steve James, printed on the entry coupon and send your answers to:

CAPTION COMPO,
CU Amiga,
EMAP Images,
30-32 Farringdon Lane,
Farringdon,
London,
EC1R 3AU.

The caption we think best, wins the lot – nope, there are no runners-up prizes at all! Closing date for entries: 30th November. The Editor's decision is final and he'll almost certainly ignore anyone who writes in to gripe. Hah!

My Caption is (no more than thirty words, please):

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inside information

A change of pace this month, as Inside Information mutates into a far more entertaining beast than ever before. You want the gossip on industry happenings? Then look no further. You want all the latest charts? Here they are. You want to know about Dan Slingsby's sordid hobbies. Sorry, he cut those out...

BROOMFIELD GETS HIS SKATES ON

EXCLUSIVE PIC

CU'S TECHNICAL Guru Mat Broomfield amazed us recently by proving that he does actually leave the side of his Amiga.

Whereas most technical writers suffer from the popular image of an anorak and thick specs (an image which Tech Editor Nick Veitch revels in), Mat has become Basildon's King Of The Skates.

Shown here at his local 'Bowlorama', Mat can be seen strutting his skatey stuff much to the amazement of the local girlies. So girls, if you have got a problem with *OctaMED*, give Mat a call. Also, from next issue, Mat's Q&A copy will be featuring tips on squeaky wheels and half-pipe turns...

JENNIFER, JUNIPER

Ah, the course of true love never runs smoothly – especially when the Atlantic Ocean stands between Cupid's arrows and their target.

Shortly after returning from a trip to New York on CU's behalf, our Tech Editor, Nick Veitch, was bombarded by a series of lengthy faxes from a certain Jennifer who works at an Ontario-based company who will remain nameless (the clue is, it starts in G and ends in Old Disk...). Now, rather than the usual 'Hi, how are you? Down to business...' faxes we are used to seeing, these were lengthy opuses which spoke about feelings, long-distance luuurve, and (gasp!) buying a house. 'I don't know what she's on about' claimed Master Veitch. Hmmm, doesn't explain those long-distance calls that keep you in past office hours, though, does it, Nick? Despite what David Mellor says, I think we have a right to know. Watch this space...

ANCO BOSS HAS 'NEVER SCORED'!

IN A SOARAWAY CU SCOOP, Anco's diminutive boss, Anil Gupta, has admitted that he has indeed never scored – at *Kick Off*, that is.

Grinning broadly, Anil admitted that, despite being responsible for what must surely be the most-played computer game ever, he 'can't play the bloody thing to save my life!'

EXCLUSIVE

This revelation came when CU were just tying up this month's incredible *Kick Off III* scoop, and the Anco boss was undaunted by our looks of horror. 'Well, when I say that I have never put one past the goalie, that's not exactly true.' (at which points our faces rose again) '– I've put a couple past my own goalie several times!' At this point, we left Mr Gupta as he went into lengthy detail recounting the exact events and how *Kick Off* programmer, Dino Dini, can't stand football. Has this man got no shame?

NORTHERN GEEZER IS A *REAL* SHANDY DRINKER

Proud Northerner and long-term Leeds United fan, Martin Brown, has been shown up to be the lily-livered pansy we always thought he was.

Team 17's leader can often be heard extolling the virtues of Northern life and the benefits he reaps from consuming dozens of pints of Tetley Bitter – pah! In a recent visit to EMAP towers, Mr Brown was last seen stumbling away on a wildly-varying course to catch his train back to Wakefield. This was after an evening with assorted EMAP lager fiends, none of whom make half the noise Mr Brown makes about the quantities they consume. Adding insult to injury Martin then conked out on the train, only to wake up in Darlington – which is many miles from his home-stead! Still, at least he'll stop going on about his booze prowess now, and a challenge has been offered for a session at the next computer show.

(PS. Kids, we know it's not hard and clever to drink lots of alchohol before you all write in – but we can't help ourselves!)

INSIDE SPOT

Just who was the ST Review Editor who shared Ad Manager Tom Glenister's bed one drunken Friday night...

SAD BUT TRUE...

ROMEO AD MANAGER TOM GLENISTER (who forms one half of 'The Loving Brothers' with Dep Ed, Steve Merrett) has proved once and for all what a sad case he is. Whilst The Loving Brothers were out 'on the town' in Merrett's locale of Horley, Tom met and exchanged phone numbers with a rather attractive girly. She also made the promise of calling him sometime during the following Monday.

Thus, after much crowing about his exploits, Tom waited for the call... and waited... and waited... In fact, Tom never actually moved from his desk for two whole days! He never went for a sandwich, he never walked to the other end of the room to consult with the editorial team, he never even went to the loo! Sad, really. Still, on a happier note, she finally called on Wednesday, which made us all breathe a sigh of relief as he really stank by then – thus explaining how he managed avoiding going to the loo.

INSIDE SPOT

What is it that Dan Slingsby can't turn his nose up at (Knickers, it's not true – Ed).

TOP 20 AMIGAS GAMES

1. SENSIBLE SOCCER (Renegade)
Their second month in the top position, and rightfully so. The Sensible lads continue to do go, and shows no signs of being toppled. CU Screenstar, 91%

2. LURE OF THE TEMPTRESS (Virgin)
Virtual Theatre is obviously putting bums on seats, as Virgin's eagerly-awaited rival to *Monkey II* shoots up the charts. CU Screenstar, 89%

3. FIRE AND ICE (Renegade)
Graftgold's excellent return to the software scene looks set to give Renegade both the number one and two spots - but can Cool Coyote beat the Temtress? CU Screenstar, 85%

4. FLOOR 13 (Virgin)
Ever wondered just what the Government gets up to, and how much of their activities has been covered up? If so, you can become John Le Carre's Smiley in their espionage thriller. CU Screenstar, 85%

5. MONKEY ISLAND II (U.S. Gold)
Yo, ho, ho, and a bottle of Rum! Lucasfilm's epic piracy yarn is selling just as many copies as we expected. A genuine classic. CU Superstar, 95%

6. HOOK (Ocean)
Not exactly the best film licence we've seen, but its *Monkey Island*esque gameplay obviously makes it a winner with all you Peter Pan fans. There's no accounting for taste... CU Awarded, 64%

7. EPIC (Ocean)
Still flying high, DID's stunning-looking 3D blaster is making itself legions of fans. And it's not really surprising. CU Screenstar, 91%

8. MEGAFORTRESS (Mindscape)
Realistic bombing action as Mindscape's massive plane reaches the Amiga's cluttered skies. Extremely detailed. CU Screenstar, 75%

9. INTERNATIONAL SPORTS CHALLENGE (Empire)
How did this get here? Empire's rather lame selection of Olympic events crawls into the charts – presumably on the back of the games themselves. CU Awarded, 67%

10. DUNE (Virgin)
David Lynch's epic film played a huge part in development team Cryo's vision of the game - and it certainly works. A massive space opera crammed into your Amiga - excellent. CU Awarded, 81%

11. STRIKER (Rage)
'Ere it goes, 'ere it goes, 'ere it goes. After being pipped for the number one seat by *Sensi*, Rage's excellent 3D kickaround finally starts to slip. CU Superstar, 95%

12. THE MANAGER (U.S. Gold)
It's still holding in on there, and Software 2000's management sim has managed (oops, excuse the pun) to beat off stiff competition from Domark and Krisalis. Not reviewed.

13. PROJECT X (Team 17)
The Amiga's finest ever blaster finally relinquishes its hold on the chart – but is there anybody oyt there who hasn't bought a copy yet? CU Screenstar, 92%

14. PINBALL DREAMS (21st Century)
Personally, we wouldn't say that 21st Century's game sure played a mean Pinball, but it obviously has its legions of fans. CU Awarded, 71%

15. PGA TOUR GOLF PLUS (Electronic Arts)
A set of data disks for anybody still interested in Golf after the Open. Would-be Nick Faldos should be dusting down their woods as we speak... Nor reviewed.

16. GRAND PRIX (Microprose)
Geoff Crammond's stunning *Grand Prix* sim shows no sign of stalling. Definitely the veteran programmer's finest hour, and a game to be savoured. CU Screenstar, 93%

17. PACIFIC ISLANDS (Empire)
Rather too similar to *Team Yankee* for our liking, but *Pacific* is still managing to stay in the top twenty. CU Awarded, 83%

18. ANOTHER WORLD (U.S. Gold)
Blimey, this is yonks old! Delphine's unusually-presented story of a misplaced scientist is back with a vengeance. CU Screenstar, 85%

19. DIZZY'S EXCELLENT ADVENTURES (Codemasters)
The Codie's compilation of Dizzy games starts to roll back down the chart in a way only an egg can. But how long to the next selection of Dizzy 'greats'? Not reviewed.

20. CIVILIZATION (Microprose)
Empire building has never been so much fun – as shown here in Sid Meier's stunning Sim City beater. Great fun. CU Screenstar, 86%

THE WAY WE WERE

THREE YEARS AGO

- The first screenshots of Ocean's eagerly-awaited Batman: The Movie licence started to appear, and the Mancunian giants also signed the rights to Robocop II.

- The Edge announced that they were set to produce a game based on Marvel Comic's The Punisher – and what a pile of rubbish that turned out to be, too! Luckily, their game based on Daredevil never reached completion.

- US Gold's conversion of the incredible *Strider* coin-op made it debut and earned itself a Screenstar.

- Hoorah! Graftgold's stunning conversion of *Rainbow Islands* finally reached the Amiga courtesy of Microprose – but it didn't if you know what we mean. It 'officially' came out via Ocean months later.

- Cartoon-quality graphics hit the Amiga as Mindscape's *Fiendish Freddy* game wowed us all.

TWO YEARS AGO

- Psygnosis announced a rather spiffy game called *Walker* – see this month's First Imps for more (up to date) details.

- Being the nice people we are, Screen Scene introduced all the latest reviews with a piccy of Dan Slingsby in his McDonald's outfit – he still looks like Ronald McDonald today.

- *Supremacy* led a bustling reviews section, which was ably supported by Microprose's *F-19*, Virgin's *Monty Python*, and U.S. Gold's *Murder*.

- Also, news was revealed of a major revamp to CU's layout, as one Andy Beswick joined the team...

ONE YEAR AGO

- All things Comms graced both our cover and our lead feature, as we asked 'Who Ya Gonna Call?'

- US Gold made us an offer we couldn't refuse as we scooped the rest of our so-called competition in bringing you the first screens from their *Godfather* licence.

- *DPaint IV* was revealed in our massive, four-page review...

- Steve Merrett went to have a look at El's forthcoming *Eye Of The Storm* – which, incidentally, is still 'forthcoming'...

- Oops, we upset US Gold by being the only magazine to give their *Final Fight* conversion a kicking. Whilst other mags gave it scores in the high 90s, CU rated it at a mere 60%. We still think we were right...

- Games-wise, we had a busy month, with reviews of *The Simpsons, Blade Warrior, Head Over Heels, Cruise For A Corpse*, and *Nebulus II*.

● *WHAT THE TEAM ARE PLAYING THIS MONTH...*

DAN SLINGSBY
Civilization, Zool, Risky Woods, Kick Off III *(preproduction version, nyah, nyah!)*, Better Than Life

STEVE MERRETT
Sensible Soccer, Striker, The Addams Family *(he's completed it, you know)*, Jimmy White's Whirlwind Snooker

STEVE KEEN
Sensible Soccer, Project X, Guy Spy, The Addams Family

TONY DILLON
Beast III, Sword Of Honour, Red Zone

NICK VEITCH
Sensible Soccer *(albeit badly)*, Omar Sharif's Bridge, and with several females' emotions...

netwo

Following last issue's look at setting up a bulletin board, this month, Dave Burns lends us a hand as we try to get networking...

FIRST THINGS FIRST

First of all, you're probably wondering what networking is all about? When a user logs onto your board and leaves a message, any other user that logs on will be able to read it and reply to it. This is great, but what's more fun is to be able to have your message read on boards all over the world. And this is what we mean by the term networking.

How it works is that certain message areas (called Echoes) are linked via whatever network you decide to use to boards all over the world. Your users leave a message in these areas, and your board calls a local board and sends them all the new messages. At the same time you pick up all the new messages he has collected. These are all archived files, and when your system receives them, if you have set it up properly, it will unpack the mail and toss it into the correct mail bases. What this means to your user is that a message they enter on Monday could be replied to by a user in America, Australia, or indeed anywhere – with the reply appearing on your board by Wednesday or Thursday.

ADVANTAGEOUS

There are many advantages to running a Networked system, the main being the international contact. Your message bases will be full and varied even if you only have a few callers a week, and you have instant access to a vast worldwide selection of files and discussion areas. It also helps you advertise your board, as each networked system has its own Origin Line. My own is as follows: Origin: Wombats Burrow II 0634 377303 10pm – 8am (2:440/102).

The first part is whatever you want to say about your system. It is

LINK ESTABLISHED

Interfacing with the technology that makes comms possible we are now hooked up to two international information networks.

Firstly, we have a local email echo on the Hotel BBS (063 483 1389) – through Fido net. You can send us messages via any board that supports this echo and, although we may not reply instantaneously, you can be sure that your comments and messages are being read and that we will get back to you (remember that we still have a magazine to write).

We can accept your technical queries, opinions and letters for publication via email.

The other way you can contact us via your modem is by calling CiX. CU Amiga have their own conference there where you can post your insults or your queries direct to the people that matter. This conference is divided into several parts, including one which lets you download files .

CiX is a subscription only board, so you do have to pay for the time you are connected.

If you want to contact us via either of these systems you should email
"Daniel James Slingsby" on the Fido CU Amiga echo or
"cuamiga" on the CiX network, or alternatively join the CU Amiga conference, imaginatively titled "cuamiga". (CiX is on 081 3908446)

We hope to be extending our coverage of the UK via modem at a local level. Whilst we will be thinking up new ways to get in touch with you, you could tell your local sysop to pick up the CU Amiga echo on his board.

See you online soon

+++
ATh

rk your system

ADDITIONAL ADVICE

My thanks go to Andrew Pick, Sysop of the Needful Things BBS who assisted with information. Andrew's board can be found on 0495 245151 at speeds up to 9600 HST. Andrew has also made a very generous offer to readers of CU Amiga. If you want any of the software mentioned, give his board a call and he will be more than pleased to make it available to you for downloading – or, on receipt of a disk and return postage, he will be quite happy to send it to you. If you are not sure that you are able to set it all up, once more Andrew will come in useful. Just leave him a message explaining the problems you are having and he will do his level best to help you.

You can also leave messages for this magazine in the CU Amiga area of his board. Should you want to contact me direct, give my board a ring on 0634 377303 from 10pm-8am or netmail me at Fido 2:440/40. Please do not use this number for voice calls.

advisable to put your number and operating hours here. The number in brackets is generated by your system, and identifies your system to the network. For example, the Number shown earlier is a Fido Net Number, Fido being the biggest international network. The 2 is the zone (Europe), 440 is South East England, and 104 is my Node. This is all the information your system needs to send mail or messages to mine. Before going into how to set up a networking system, let's look at the types of mail:

LOCAL

This is mail left on your system that will not be exported to the networks. The only way others can see and reply to it is to log onto your board.

ECHO

This mail is 'Echoed' throughout the network system. There are rules which apply to this sort of mail. If you are in the Amiga echo you must stick to topic, you are likely to get a severe ticking off if you start talking about STs or PCs here. Likewise, you would not be very highly thought of if you went into the ST echo to inform those poor misguided souls that along with the best computer, you also subscribe to the world's best Amiga magazine.

NETMAIL

This is private mail. Mainly used between Sysops, if you wish to you can also make this available to your users. This is for private mail, and will only appear on the board it is intended for. Therefore, it is essential that you know not only the name of the person you are sending it to, but also the network Number of the board they use. Netmail can be sent in a variety of ways, so setting up this service for your users requires a lot of thought. Are you going to allow your users to CRASH mail (to send immediately and directly)? This will, of course, add to your phone bill.

Are you going to send the mail direct or are you going to route it through your hub? Direct means that it will arrive at the recipient immediately, at your expense. Routed means that a package of all mail will be made and it will go to your local host for distribution.

Another term that you will become familiar with is Moderator. He is the man responsible for the echo, and therefore he will come down like a ton of bricks on anyone that disobeys the rules of the echo.

SETTING IT UP

Now that we know what Networking is, how do we set it all up? Well, this requires a little thought and time, but is worth it in the end. You need the addition of two more programs. There are a lot available, but I think that Andrew Pick of Needful Things has a great system, so we will look at the assorted features he is using.

TRAPDOOR

This is the main Mailer. It sits at the front end of your system and waits for a caller. The phone rings, Trapdoor answers and decides whether it is a human caller, or a mailing session. If the caller is human, Trapdoor will call the BBS software and nip off for a quick cuppa while your caller is online. If, however, the call is from another system to send you mail or files, it will receive the packets and place them into a specified directory until it is dealt with. Using Trapdoor you can also set up an Emsi profile for the built in Comms software that will not only dial any of the boards in the network, but also log you in!!

Using Trapdoor you can also 'FREQ' Files, Send files, and even send messages without actually logging on to the board concerned. What happens with FREQing (File REQuest) is that Trapdoor will dial the board, and request the file. The mailer at the other end will then automatically transmit the requested file. Once received Trapdoor will disconnect and go back to waiting for a call. To use Trapdoor to its full extent you will need to spend time studying the documentation, and you will need to write a few Script files to tie everything together.

FOOZLE

This is the 'guts' of the system. While the board takes the message, and Trapdoor sends them, Foozle is the program which scans all your Echo Areas to find new messages, packs them all up, and puts them where Trapdoor will find them. When mail is received by your system, Foozle comes back into play to unpack the received mail and 'Toss' it into the echoes it is meant for.

The whole procedure is automated by the setting of 'Events'. For example, you can set an event to scan all the message bases, pack up new mail, dial another board, send and receive mail, then unpack the new stuff, before putting it in the correct place and returning to wait for a call.

Finally, It is your responsibility as Sysop to ensure that all messages and files that appear on your board are legal and decent. You cannot be held resposible for views expressed in messages that are on your board, but if you have abusive, obscene or other such messages on public display you can land up in trouble. Likewise, you are also directly responsible for the files which appear in your download areas. Therefore, I strongly advise that you have an area set aside for uploads so that you can check them before making them available for public consumption. You cannot have any commercial software so, if in doubt, delete it. This is also a good time to check that each upload is virus free and working well.

NEXT MONTH **Next issue, we will look at a few 'Doors' you can add to your BB System to round off this 'Setting Up' series. If you are running a system, or know of any good systems, please feel free to contact me as above, or drop me a line c/o CU Amiga. Your input is very important.**

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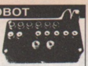

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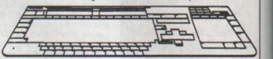

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BACKCHAT

MUSIC MAESTRO

After reading your entertaining article on 'Sound Advice' I found myself with some interesting remarks to make.

1) The cheapest way of mixing sound (and connecting computer, monitor, keyboard and tape recorder) is buying some 'Y' leads at your local Tandy shop.

2) Instead of stealing beat-tracks from various CDs, you could easily make them yourself! All you need to do is sample (at high quality) some drums and other instruments you might need. Make your own backing track, spread over 4 tracks in your sequencer(*Soundtracker* or *MED*). Keep it short – to roughly 16 note positions. Record this on tape and sample it back into your computer. And there you have it: one nice backing track and 3 channels still remaining!

3) As I have performed live with the A500 and a Casio CT47, I know that there is no real need for expensive equipment, just good quality samples and a great deal of talent.

4) We musicians (and I speak for a few) are not satisfied with the way things are going on the PD market these days. There is practically no room for original and/or progressive music to get published, but lots of space is given to what we call 'stolen' software. Why does everyone find it normal to sample complete pieces of copyrighted music? Isn't there a law against that in Britain?

Maes Hugo, Belgium

WRESTLE FIX

I have recently been reading a lot of negative reviews about Ocean's *WWF Wrestlemania*. I have recently bought *Wrestling Masters* from E.S.P software, who advertise in your cool mag! The game cost £19.95, but it's certainly worth the outlay as it's far superior to Ocean's effort. Why not check it out...

Scott Carter, Surrey.

A600 BLUES

I have just finished reading the cover feature in the June edition of CU Amiga. I am beginning to wonder if Commodore know what they are doing. They bring out the A500+ just before the Christmas rush, probably knowing the A600 and A570 were on the production line, and then discontinue the A500+ line six months later. Not only did the A500+ bring compatibility problems, but the A600 is now rumoured to have the same trouble. As I am a A500+ owner I am glad to see that the A600 has almost the same 2.0 kickstart, so the games market for the A500+ will not disappear over night.

Rita Dearden, Sheffield.

A600 BLUES 2

Commodore have undeniably done quite well with the Amiga, but with a product like the Amiga it's quite hard to go wrong.

The A500+ and A600 are obviously good machines but would be so much better if they had received the proper release and support they deserved. Leaving third party developers and magazines such as yours to pick up the pieces and explain things to the bewildered public is inexcusable. The mind boggles to think what could have happened if the Amiga had fallen into the hands of a half-competent computer manufacturer. Good God, Commodore! What the hell are you playing at?

Stephen Sweet, Kent.

It certainly looks like Commodore have angered a few people with the release of the A600 so soon after the A500+. Who knows what people's reactions will be when the 32-bit A800 is released in the Spring of next year. Do Commodore really deserve the Amiga? Will incompatibility problems rear their ugly head once more? I'm all for innovation and change, but with three new Amigas and a new version of the CDTV in development, it's certainly difficult to know exactly which machine is best suited for which purposes.

GB ROUTE

I bet there are lots of Amiga users out there still struggling to install *GBRoute*. It didn't take me long but I found it a bit tedious to have to search out the 'Explode' file which you failed to mention as necessary. Precise instructions or a script file would have been most welcome. And it's so easy to make it auto-run but you chose not to mention that either.

The program itself? Crap. Despite its fairly good reviews I consider it outrageous that a program can be sold, updated to version 1.02, distributed on a magazine coverdisk, and still be seriously bugged.

The enclosed print-out shows both the fastest and shortest routes from Dunstable to Pontypridd. The summary of the Fastest route shows the Total Time as 03:36, not 02:42 as shown in the Cumulative column. Total cost is shown as £12.08, it should of course be £14.80. It appears the program takes the Shortest figures for Time and Cost when printing both charts, even if the Shortest route has not been requested. The correct figures are shown on screen, so why aren't they printed?

I'm still looking for a place called 'Berkhamstead' on my Ordnance survey maps. The closest I've found so far is 'Berkhamsted'. I wonder how many more bugs and spelling mistakes there are?

Steve Ellison, Dunstable

Apologies, once again, for the *GB Route* cock-up – we'll certainly print clearer instructions in future. As for the program itself, I think it's brilliant. Admittedly, there are a few bugs, but then what program hasn't? As the only one of its kind on the Amiga, it's better than nothing.

SCORES ON THE DOORS 1

I read your article 'Scores On The Doors' regarding the problems connected with the greatly-increased 'scoring' of computer games, with considerable interest but with a growing feeling that you were actually missing the point in a big way.

It seems to me that the evaluation of games by giving a mark out of 100 is a completely meaningless exercise – its only discernible purpose being to save the critic from the bother of expressing his feelings about that game in words that adequately convey those feelings to the reader.

If one is scoring games out of 100, then the scores must have either an absolute or a relative value or possibly both. It is clear that the scores cannot be absolute values in that they are not actually the measure of anything tangible. 90% is 90 out of 100 what? Does it mean that the game is nine tenths of the way to being a perfect game? If so, what on Earth is a perfect game? If it does not mean that then what does it mean?

The scoring is equally useless if we treat all marks as relative. Suppose, for example, that one game is scored 90% and another 89%. The difference is so small that by itself it is an inadequate guide to the relative merits of the two games and the only way that the reader can properly separate the games therefore is to re-read the text of the articles for each game's respective good and bad points and, if the article tells him that, then he does not need the mark in the first place.

Scoring as comparison is no more helpful over wide marking discrepencies. Take a game with a score of 90% and compare it with a game given just 45%. In relative terms, one is twice as good as the other. That is surely not what the maker in such a case would be wishing to convey since the 90% game would presumably be outstanding and the 45% game very poor and would in no way be half as good as the better game. In fact, the 45% game might not be considered by the reviewer to be worthy of purchase at all.

The use of figures gives a quasi-scientific air to an evaluation exercise that is essentially one of opinion. Numbers and percentages are not used in everyday conversation to express relative values of quality precisely because they do it so badly. People do not say 'I saw a 75% programme on television last night' because it conveys nothing to the listener. Use of simple English terms and expressions like 'good', 'bad', 'better', 'worse', etc. may appear less precise but tell the reader a whole lot more about the feelings of the writer than presenting him with a number and more or less telling him to make what he can out of it.

Book reviewers do not give marks out of 100 for a book. They tell you about the book, they discuss its merits and demerits and they then leave the deciding process up to the reader. The games reviewer should do the same and if, at the end of it, they are unable to express his views in literary form sufficiently cogently not to need to give a mark to summarise it, he or she should not be a reviewer.

The greatest irony is that the reviewers in your magazine do in fact sum up the qualities of a game in their articles very well and have no need of a scoring system which as often as not seems to bear no relation to the excellent article above it and detracts from rather than adds to the overall quality of criticism.

J P Silver, Leicester.

SCORES ON THE DOORS 2

I write in response to your Points of View column (CU July 1992).

I run a small (very small) Public Domain library. One of the things I do each month is to wade through the PD sections of all the main Amiga magazines and add the review scores to my database so that I can give an accurate score for each program in my catalogue. I know that when you wrote your column you had commercial software reviews in mind rather than PD but of course the principles are the same.

As I have said, I personally get some use from the system of marking programs as percentage ratings or as marks out of ten, but I nevertheless feel that it would be better all round if, instead of giving a mark where 81% is better than 80%, a more general indication along the lines of 'good', 'fair', 'excellent', 'rubbish', etc., were given. Reviews are in any case far too subjective to make a precise marking meaningful, and as you point out yourself, what do you do when you've marked something highly and something even better comes along? How do you beat a perfect ten in Olympic gymnastics?

If software continues to improve, and like any other field of human endeavour, it certainly should, then theoretically we must ultimately reach the point where 100% is awarded regularly. How will you then distinguish a program which surpasses all others? True, you can just as easily run out of superlatives in verbal descriptions, but these descriptions do find their own level, so to speak, when standards change. By that, I mean that something described as 'superb' ten years ago will not devalue the same description being applied to a far superior product today. As standards change, so does the reader's interpretation of the description and consequently his expectations from the product.

The marking system does not allow this dynamic reassessment of relative

BACKCHAT

standards. A rating becomes a watermark, anything higher is better and anything lower is poorer, regardless of the general standards of the times. Further, by being so specific and precise, much emphasis might be put on a difference of a couple of points which may not really be merited. This, too, will cause squabbles and moans from the software companies.

In fact, according to my database, the differences between different reviews are not as great as one might expect. There are exceptions, for example the music demo *DeadBeat Vol 1* received 75% from your reviewer in your June issue, while the same month Public Domain magazine slated it with just 25%. Broadly speaking, though, reviewers do tend to concur in their assessments of what is good, bad or indifferent. Again, the rating system seems to force attention on what are really very marginal differences – so-and-so gave it 77% but this chap's only given it 75% and so on.

I must say, with apologies, that I disagree with your stated policy of only reviewing good software. Your reviewers must presumably spend some time with such stuff in order to reach the conclusion that it's not good enough, and I for one would like to know what they found. When buying software you can't always find a review for it, so you go ahead and buy it. It may be that on occasions disappointments could have been avoided if we'd known that CU Amiga binned it! I'd also question the wisdom of this policy from the point of view of inspiring confidence in your reviews. I know you say you only review the best, but you must realise how it reads when everything glows. Some readers may begin to wonder whether you are ever critical of anything. Are you really sure that you are not just avoiding possible conflicts with advertisers?

David Miller, Clwyd.

SCORES ON THE DOORS 3

My feelings on your comments about game reviews are as follows:

It is essential that readers can 'trust' a magazine to review games fairly. If a game is a load of rubbish (and many of them are!), but a review still gives it a reasonable rating, it becomes impossible for the reader to determine the good games from the bad. If a magazine is prepared to give a mark of 10 or 20% for a review of a bad game, the reader is more likely to believe that a game which gets 90% rating is worth buying!

Editorial independence from the software houses is also of fundamental importance – once a magazine allows a review to be influenced by the publisher, the reader's 'trust' is lost.

As you say, the standard of Amiga games is improving all the time. It would be ridiculous for review ratings to match this improvement as all current games would now be scoring between 300 and 400% based on 1987 scales (well, most of them anyway!). Games should be reviewed against the current standard only. This would mean that if older games were re-reviewed today, they would score lower than they did originally, to reflect the general improvement in standards since they were released. The standard for judging budget software should be lower to reflect the lower price.

You said in your column that a 'perfect' score is only just around the corner. In fact, a rating of 100% was given to *Xenon II* a couple of years ago by a rival mag. They then had a problem the next month when *Battle Squadron* was released, as it was significantly better than *Xenon II*. They of course had to give it more than 100%, so they did!!

Gareth Kitchener, Shefford.

This is only a small selection of the letters we had about Dan's rant in Points of View in the July issue. The vast majority were in favour of abandoning a percentage-based scoring system and letting the reviews speak for themselves. I can obviously see the advantages in doing so, but computer game mags have traditionally used a percentage score when marking games. Is it time we abandoned this principle and adopted a more mature stance? Should a game stand or fall on the quality of the written word? Please write in and let us know your thoughts, as we're teetering on the edge of abandoning the pecentage-based system once and for all – and it could be YOUR letter that settles the argument.

AMIGA vs MEGADRIVE

For the last couple of months, I have been in two minds as to whether to purchase a Sega Megadrive or Amiga A500. After purchasing your magazine and making a few enquiries, I decided on the Amiga.

I am extremely pleased with the Amiga, it's just so much more versatile. Even though the initial cost is slightly more expensive than the Megadrive, the Amiga range of software is greater and generally much cheaper.

Mike Green, Surrey.

Hmmmm, a variation on a theme, perhaps, but one we'd like to comment on anyway. It seems that everyone wants to jump on the console bandwagon at the moment, but they forget the versatility that the Amiga offers. It's all well and good playing games all the time, but what happens when you want to write a letter, compile a report, hack around with screen shots taken directly from a game, draw a picture, compose a tune, etc? Yep, the humble Amiga is there, ready and waiting at your disposal – so don't neglect it.

BATH TIME

In the May issue of CU Amiga, you printed a man in a bathtub playing with a rubber duck! I read the contents of the page – which was all about the obscene price of computer games – but there was no reference to this picture! Why was it there, and who is he?

Hisham A. Rahman Khalifa, Bahrain.

The sad individual in the bath tub was, in fact, none other than CU contributor, Rik Haynes. Unfortunately, just after the photo was taken, Rik disappeared down the plug hole and has never been seen since. A major loss to the software industry and we'll miss him (like a hole in the head).

PC vs AMIGA 1

I know a few people, myself included, have considered replacing their Amiga with a 486 computer. After all, for the same price as an A3000 (or even less) you can get a computer with a faster processor, 8Mb of RAM, a 200Mb hard disk, graphics with a resolution of 1024*768*256 and 640*480*32768 or more, and an 8 bit stereo sound board with tens of FM channels in addition and a built in sampler, MIDI and CD-ROM interface.

Not only that, but the Amiga has very few software development platforms which are easy for the programmer (I only know of HighSpeed Pascal), while the PC has Turbo-everything, Visual Basic, and other neat stuff. And as for games – once all graphic designs were created on the Amiga and ported to other machines. Now most games are developed in 256 colours and ported to the Amiga. Even so, I really dislike the PC architecture and the processor within. It's totally unexciting, and not integrated very well. But if this architecture gives better results than the elegant one of the Amiga, and for a cheaper price, why should I stay with the Amiga?

I hope that Commodore get their act together soon. I read 'the Ultimate Amiga' in the May issue (this letter is a response to that), and my opinion is that the first thing Commodore should do is to give the entry level Amigas 256 colours in low-res, with an enhanced palette, so that at least the Amiga would remain a competitive games machine. Software companies will probably support this mode because they will be able to use the same graphics developed for the PC.

As for higher level Amigas, Commodore should do something really innovative with them – make them better than other computers – just like the Amiga was in '85. I'm not sure it is possible, and I have no faith in Commodore when it comes to innovations. IBM now goes for a 2.8Mb disk drive, and on the Commodore front 1.4Mb is still a rumour. If Commodore could licence the new Japanese mini-disks – rewritable optical disks with a 128Mb capacity, that might be more interesting. Why not use the new 10ns cached memories to allow a 68040 and a hi-res true-colour video controller to access memory in a similar way to today's Amiga architecture? A relatively cheap 68LC040 (68040 without floating point processor) can be used to produce an inexpensive but powerful new Amiga.

But I know Commodore – they will put out a 68020 machine as their new flagship, and will probably let us use two 16-bit sound channels instead of four 8-bit ones. And maybe even give us 64 colours instead of 32 plus halfbright – Wow! I'm just waiting for that day, so i can say 'I told you so,' and go out and buy my 586 with true colour, 32 16-bit channels, a video processor and Digital Signal Processor, 20Mb diskettes and 1G hard disk for a lower price.

Eyal Teler, Israel.

AMIGA vs PC 2

As a professional freelance programmer, I thought I'd air my views on a few subjects. In response to E. Gray from Middlesex (CU Amiga, Backchat, July) – don't bother writing about anything you obviously know bugger all about! Here we go again, the PC vs Amiga debate...

Fact: The Amiga doesn't run at 3MHz as stated by E. Gray. Its processor (for the Amiga models containing a 68000 processor) is 7.14MHz. Generally, a 68000 is roughly equivalent to an 80286 processor (found in PC AT machines). Just because the processor runs at 33MHz doesn't mean its blisterringly fast – the PC processor setup is based upon extended 8 bit architecture (in order to remain compatible with XT models). Add a slow hard-disk, high resolution display and crap MSDOS with Windows and you'll see how 'fast' a 33 MHz processor is! The 680X0 family was based on 32-bit architecture right from the beginning. I've not even mentioned the crap memory addressing system on 80X86 processors – segmented slow addressing – with extended or expanded memory just to get above 1MB. Has E. Grey ever seen how 'fast' a PC runs at 32768 colours with 800x600 resolution? Even at 256 colour mode things are slow. Fact: The bigger colours and the higher resolution means slow running. Why do you think you never see any games run in HAM mode?

Okay, E. Grey. Try out a PC and use *Windows v3.1* or *Paintbrush*, then come back to an Amiga with *DPaint* – then argue with me! For a 'decent' PC setup you'll need: 4Mb of memory, 130Mb hard drive, 2Mb VGA card and 486 processor. Think how much that lot will cost you! The Amiga might be out-of-date, but the new 'AA' chip set is coming, just be patient.

An Angry Programmer, Scotland.

The argument continues unabated about the individual merits of both the Amiga and PC. If you haven't had your say yet, you'd better hurry up before we move onto other, more enlightened topics.

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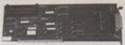

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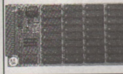

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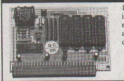

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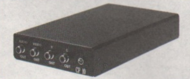

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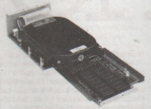

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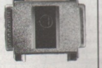

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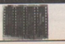

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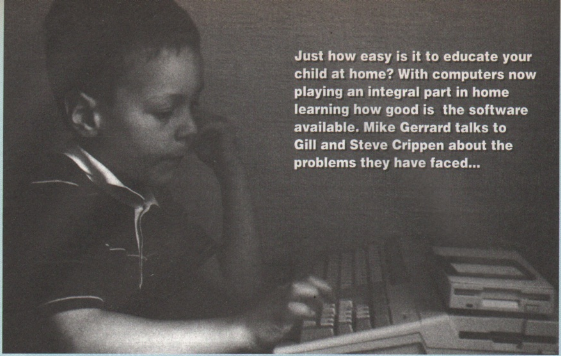


Just how easy is it to educate your child at home? With computers now playing an integral part in home learning how good is the software available. Mike Gerrard talks to Gill and Steve Crippen about the problems they have faced...

Five-year-old Matthew Crippen sitting at his Amiga. Whereas most kids his age are quite content to blast the nasties in, say, *Project X*, Matthew prefers to tinker with *Pagestream 2*...

school's

DOING IT YOURSELF

At a time of year when children dread the end of the school holidays as much as their parents look forward to it, there are many other families for whom school holidays simply don't exist. They are the ones who educate their children at home. It's estimated that there are at least 10,000 children outside the school system. The number may easily be twice as high, swollen by those who escape the net of government statistics completely.

Many are members of Education Otherwise (see separate box), a group which believes that parents have the right to educate their children in the way that they choose. The law agrees with them: education is compulsory, but school isn't. Gill Crippen, who lives in Hemel Hempstead, read about the organisation in a woman's magazine several years ago, and turned to EO when she and her husband, Steve, withdrew their son from school due to the problems he was having. They now educate Matthew, 5, and his younger sister Sarah, 3, at home – with the help of their trusty Amiga, of course!

'Matthew has been to school,' Gill Crippen explains. 'In fact, he started when he was four. I was watching a TV programme once about MENSA children. They were showing some incredibly clever children of seven, and I thought: hang on, my Matthew can do that and he's only three!'

MENSA sent forms for Matthew to complete, and, as a result, advised the Crippens to have him assessed by an Educational Psychologist. 'We went to Harley Street to see a woman called Margaret Pollock,' Gill continues, 'and she said that Matthew was the most gifted under-five she'd ever tested and that he had the IQ of a nine-year-old. She also said that he should go into a primary school as fast as possible. We had a huge fight with the local authority to get him in, but eventually he was put in with the five and six-year-olds.'

PULLED BACK

However, what should have been an exciting time for Matthew proved to be a disaster. Instead of being a help, his high IQ was a hindrance: he was so much brighter than the other children that he began to be bullied, coming home with bruises. He was also bored with the work. 'He used to come home from school disgusted at the simple things they had to do. He came home one day and said, 'We had to count buckets!' He couldn't see the logic in it, he didn't see why you had to count buckets: why couldn't you count numbers? He could

EDUCATION OTHERWISE Education Otherwise was established in 1977 and now has 2400 members around the world, though mostly in the UK. 'There are many local groups,' says Publicity Officer Jane Lowe, 'usually organised on a county-by-county basis.'

Membership costs £12.50 a year, which provides a bi-monthly newsletter, a list of members and all the support and information you might need. 'The legal situation,' Jane explains, 'is that if your child hasn't yet attended school, then you needn't inform anyone that you intend to educate them at home. If your child has attended school then you must inform the school and the Local Education Authority that you intend to withdraw them and educate them at home. They'll send an Inspector round to see what arrangements you've made. The Inspector will usually visit once a year to see how the children are getting on, but they tend to be more concerned with the older children, and obviously every authority and every family is a different situation.'

Education Otherwise is at 36 Kinross Road, Leamington Spa, Warwickshire CV32 7EF. Its helpline phone number is 0926-886828, and it has a special helpline for dealing with problems of school phobia: 0304-210997.

multiply and divide when he went to school, but he had to go back to counting buckets. He said, 'I'm really disappointed with school. I thought I was going to learn to read and write and all we did was count buckets and play with sand.'

'And he couldn't understand,' Gill adds, 'why a six-year-old was still drawing a picture of the sun with a face on it. He said: 'Don't they realise it's just a star?' But the more he said, the more he was disliked.'

After eight months, the Crippens withdrew Matthew from school, joined Education Otherwise – and bought an Amiga. After a slow start, Matthew's IQ continued to increase and, after a recent return visit to the Educational Psychologist, he was assessed as having the IQ of a twelve-year-old. And you can believe it as you watch him using the Amiga, concentrating on his favourite programme, which is not *Fun School* or *Lemmings*, but the DTP program, *Pagestream 2*. 'He loves it,' Gill says. 'He'd spend all day on the computer if I let him. We tend to do two hours of 'education' every morning, from eight o'clock until ten o'clock, and the rest of the day is 'play'. But we learn from playing, of course.' So what are Gill and Steve's qualifications for teaching? 'None at all,' Steve says. 'I hated school and left at 15. Gill left at 18. We're neither of us qualified, so I think we've proved that you can do it.'

Gill uses *Pagestream 2* to prepare work sheets for projects – they're currently doing Transport – and Matthew uses it to write his own letters to friends and others. He recently wrote to NASA as he wanted to see one of their satellites, and when he wondered how a ship was built he wrote to a ship-builder to find out.'

ENTER THE AMIGA

Steve Crippen originally considered buying an Amiga to both play games on and to help him with his site clearance and roofing company. Now he's lucky if he gets a look-in. 'I'm delighted,' he says, 'that Matthew is proficient at a program like *Pagestream 2*, and we haven't even covered half of what it will do. It's a fantastic program. He loves playing with it, and of course he's learning a lot from it – reading, for one thing. There are some very long words on those drop-down menus. He'll say to me, 'Dad, what does 'append' mean?' So I'll tell him and then for the next few days he'll be saying, 'I'm just going to append this picture to that text.'

His sister Sarah prefers *Lemmings*, which meets with mum's approval. 'I think that's a brilliant game,' Gill says, 'because it makes them think. You really have to figure things out well to get through the screens, and it's not aggressive. I don't like these shoot 'em up games, although Matthew loves them.'

Their 500 Plus was bought at about the time Matthew was removed from school, and has since acquired a second disk drive, 2Mb of memory and a Star LC200 colour printer. Steve provides images for the children to use in *Pagestream 2* by digitising footage from his camcorder. He also has his eye on a hard drive: 'I might even sell the lot,' he says, 'and get an Amiga 2000.'

'We don't think about school holidays,' Gill says. 'My whole life is dedicated to the children, though I do sometimes think: oh, I'd love to send them to school today. But that's only now and again. I've only got to remind myself how unhappy Matthew was. But it's mostly good fun. They've both got a terrific sense of humour and are great to be with. The main priority we have is that he has a happy childhood, and that's all we want. At the moment he's getting a good education and he's happy and that's what counts.'

sout

The Crippen family. 'I'm delighted that Matthew has got to grips with the likes of *Pagestream*', says Dad, Steve (left, holding Matthew). 'He learns just by playing with it, and the words the package contains have certainly helped expand his vocabulary.' Other favourites in the Crippen household include the *Fun School* packages and that old favourite, *Lemmings* – 'a brilliant, thought-provoking game', says Mum Gill (far right)...

EDUCATIONAL SOFTWARE BROUGHT TO BOOK

Parents baffled by the increasing amount of educational software available for the Amiga will soon have a book to help them sort the wheat from the chaff. CU Amiga contributor Pat Winstanley, herself the mother of two children, is writing the Home Educational Software Guide.

'It's aimed,' she says, 'at parents who probably don't have a clue as to which type of educational package is best for their children. It's done in two sections, the first about how to choose software, what to look for, what to avoid, what type of game suits what type of child, how many of the manufacturer's claims to believe, things like that.

The next section covers lots of educational games done in a magazine reviewing style with ratings, comments and screen shots from the games. For the Amiga I'd say there are probably at least fifty educational programs reviewed.'

The idea for the book was Pat's, and has been bubbling under in her mind for the past 18 months, mainly because there is nothing like it on the market. An approach to publishers Kuma turned an idea into a deadline, which her children helped her meet. 'They've been my testers all along. One is seven, the other nine, which is handy because they can also help me test stuff for younger children and to some extent for the older children too, though I also roped in other local children to help me with some of the software aimed at older children.'

'So what are some of the conclusions she's reached? 'Mainly,' she says, 'that the age ranges given on the packaging are often wildly inaccurate. They obviously aim very much at the average age but they can easily be a year or more out either way, depending on the ability of individual children. There are also very different types of educational games, and how good they are for your child depends on whether they enjoy that type of game. The arcade-type games obviously appeal to children who are good at that kind of game, but if your child isn't then they won't get as much out of it.

'I'm not limiting it to just software that's labelled educational, but also programs such as *Populous* and *Captive*, which are sold as games but are much more than that – they do have educational value, and require a great deal of skill to play them. Many of the programs don't actually teach, they simply provide practice – which is fine, as long as you know that's what you're getting.'

We'll be reviewing the book when available, which should be sometime in the autumn at a price of £14.95 (For more info contact Kuma on 0734-844335).

NEXT MONTH

Mike takes a look at more of the Amiga's growing uses as an indispenable education tool.

HELPLINE

HELPLINE IS SPONSORED BY MICROPROSE

Here are the best tips pages in town. If you're stuck on some mean mutha of a game, look no further as this is the place to come for help.

ENQUIRIES

BERMUDA PROJECT

Can anyone help me with this old game? I can get the hang-glider and find the jeep, plane, and village, but after that I'm completely stuck.

Andrew McBain, Moray, Z1

DEFENDER OF THE CROWN

I've never really been able to get very far with this. Can someone tell me how I can get my hands on some land? Everytime I've finished raiding someone (Roger Falconbridge, for instance) everyone else gets a share of the captured territory except me. I don't want a cheat, just an answer to tell me what I'm doing wrong.

David Watson, Australia, Z2

VOODOO NIGHTMARE

I cannot reach the second temple. Can anyone explain (simply!), how it's done.

Desperate Amiga Owner, Z3

RISE OF THE DRAGON

I'm in the sewers, under the strange machinery. I've succeeded in forcing open a padlock and a jumble of wires were revealed. Everytime I use the wire-tester on them, though, I get fried. Help.

Conrad Fenech, Malta, Z4

KINGS QUEST V

I'm just at the beginning of the game and already stuck! I've got the pie from the bakery and the coat from the tailor. Everytime I enter the inn or the forest it's 'Game Over'. What should I do next? Also, what should I use to freighten the snake that guards one of the paths? Please help!

Conrad Fenech, Malta, Z5

MYTH

Can somebody help me? I can't get past Adonis the Dog on the Egyptian level and can't figure out how to get to the doorway of Tut's tomb.

Anthony Carpendale, Z6

THE IMMORTAL

I recently bought this budget game and I'm stuck at the end of level two. I have killed the Goblin King to get the combination, but it makes no sense. Could someone please tell me the combination? Please!

Anthony Carpendale, Z7

THE MANAGER

Please, please, please, can someone help me? Has anyone got a cheat or code to get loads of money or to get into the First Division easily? Please help. as I'm starting to get extremely frustrated with the game and it just may start taking flying lessons...

Daniel Smith, Z8

CAPTAIN PLANET

On level three (The Jungle) I'm finding it quite impossible to find my way around. Please could you help?

Stephen Hudyba, Z9

SENSIBLE SOCCER

I'm really crap at this game. All my friends rack up the goals when they're playing against me. I've even chosen Brazil, but still I get a thrashing. Is there some kind of cheat so that I could win every tackle or nobble the opposition's goalie?

Mark Dustin, Z10

DUNE

It's easy to get into, but once I've got spice production underway, that's all I seem to do. I've mined a mountain of the drug, but am still toiling away waiting for something exciting to happen. But, as yet, nothing. Surely there's more to this game?

Paul Evans, Z11

RISKY WOODS

Has anyone got a level skip or infinite lives cheat for this excellent slash 'em up platform game? I can only just manage to get to level three before the skeleton hordes overcome me.

Pete Stalker, Z12

COVERGIRL POKER

Has anyone got a cheat to make the girlies drop their kit at the press of a button? Dribble, dribble.

Mark Storey, Z13

JOHN BARNES

This game plays at a snail's pace. Is there a superfast mode or am I just being incredibly hopeful?

Mark Bright, Z14

RESPONSES

LAST NINJA 3 Y2

There's no cheat, but here are all the level codes:

Level 1 – SUSS
Level 2 – IMED
Level 3 – URTI
Level 4 – BASD
Level 5 – NOUS
Level 6 – RERO

Simon Hellier, Norway

CAR-VUP Y3

Enter your name as R.J.TOONE (no spaces) on the high score table for infinite lives. Alternatively, type in BUMPER for infinite bumpers, or PUSSYCAT for nine extra lives.

Type BARMY CAR during the game for an extra 1000 points, WOOAARRGGH for faster turns and WHOOPSIE to skip the level.

Adrian Johnson, York.

RAINBOW ISLANDS Y4

Type in the following codes on the title screen for different effects:

BLRBJSBJ (permanent fast shoes)
RJSBJSBR (permanent double rainbows)
SSSSLLRRS (permanent fast rainbows)
LBSJRLJL (permanent book of continues)
RRLLBBJS (all hidden food becomes money bags)
SBBJSLSB (increase counter size)
BJBJBJRS (first hint)
LJKSKBLS (second hint)
SJBLRJSR (slow meanies down)
SRBJSLSB (increases score counter to 100,000,000 points).

Dan Wasley, Buckingham.

FINAL FIGHT Y5

To make yourself invulnerable to hits and kicks, watch the intro screen until the bloke asks Mike Hagar to turn on the telly. Then press the Help key five times to activate the cheat.

Mervin Drulan, Highgate.

AGONY Y6

While in play, type the following keys:

F1 – Sword appears under owl
F2 – Sword appears above owl
F3 – Bullets become enlarged

Press F3 three times for an extra life.

Steve Rix, Southport.

KICK OFF 2 Y10

For a successful free kick, keep your finger on the firebutton, push the joystick forward, let go of the firebutton and press it again to control the ball and turn the joystick any way you want to curl it.

Duncan Kerr, Glasgow.

MIDNIGHT RESISTANCE Y11

On the title screen, type in IT'S EASY WHEN YOU KNOW HOW (including spaces) for infinite lives and energy.

Jonathan Peterson, Hull.

ADDAMS FAMILY Y12

In the hallway, go to the bottom left and press up to reveal a hidden door. On the next screen, directly above, is another hidden door to yet more doors and extra lives. On the continue screen, go left off the screen to get four more lives. Enter BLS1T as a password to go to the last level.

Lee Rowland, West Yorkshire

JOHN MADDENS FOOTBALL X12

Here are the passwords for the later stages of the game.

0540300 – Quarter final
0150361 – Semi final
0550361 – Superbowl final

I hope these help...

HOW TO USE HELPLINE

It's easy. Just send in your letter, marking your envelope with the appropriate code number if you are sending a response or mark it 'Enquiry' if you need some help. Also, as those nice chaps at Microprose are the sponsors of our Helpline, anyone whose reply is printed will receive one of the Tetbury-based copmpany's games. Post your letters to: HELPLINE, CU AMIGA, PRIORY COURT, 30-32 FARRINGDON LANE, LONDON, EC1R 3AU.

small tips

If *Apidya* is bugging you or Hulk Hogan is still getting a kicking in Ocean's *WWF*, then fret no more. CU Amiga is here with all the cheats and tips you are ever likely to need...

CHROME

I must say I really liked your free Chrome game on one of your coverdisks. After hours of play, here are the codes for each level:

Level 1 – Start
Level 2 – Truth
Level 3 – Jelly
Level 4 – Story
Level 5 – Cloud
Level 6 – Mouse
Level 7 – Human
Level 8 – Floor
Level 9 – Paper
Level 10 – Earth
Level 11 – Space
Level 12 – Genam
Level 13 – Apple
Level 14 – Juice
Level 15 – Chess
Level 16 – World
Level 17 – Audio
Level 18 – Logic
Level 19 – Title
Level 20 – Venus

Mathew Brown, Ferriby

APIDYA

If you're having trouble vanquishing the insect hordes in this tough shoot 'em up, here are the access codes to each stage. Type in the following words on the title screen and then press return:

2nd Stage: misshoneybee
3rd Stage: deputyoflove
4th Stage: hastalavista
5th Stage: sneakpreview
Finale: showcredits

SUPREMACY

Virgin's complex space strategy game has few cheats, but if you're after unlimited fuel, scrap a solar satellite on a planet which already has sufficient reserves of fuel and you'll be granted 30,000 tonnes of liquid fuel.

WWF WRESTLEMANIA

If you want to become the world's best wrestling champ, pause the game during during a bout, type 'HULKHOGANWEARSTIGHTYELLOWKNICKERS' and then unpause the game. The fight will now finish with you as the winner.

BATTLE SQUADRON

This finely-honed (but fairly short) blaster has two very simple cheats.

1. For invincibility, type 'CASTOR' while playing. The screen will flash green to indicate the cheat is active and you'll now find you have unlimited amounts of energy. Pressing F6-F10 will cycle through the weapons and F1-F5 will give different power settings.

2. Typing in 'ELECTRONIC' will enable you to customise the game to help suit each stage. Pressing F1 to F6 will change the range of your shot, while F7 to F10 will cycle through the available weapons.

MAGIC POCKETS

When you lose your last life, keep your finger on the fire-button and the game will start again, but your score won't have reset. Keep doing this until you've reached 100,000 at which point you'll become super-powered.

NIGHTBREED

Although fairly playable, we never really went a bundle on this rather tame licence, but as it's on budget now, you may feel the need to extend its longevity with a simple cheat. If so, type 'RISEN FROM THE DEAD' for infinite lives.

POOLS OF RADIANCE

When an enemy is about to make his move, press Alt and X (or Alt and A). A message will pop up announcing 'The Gods Intervene' and you'll win the fight. This can be repeated when necessary and will also work with most of SSI's AD&D games.

PARASOL STARS

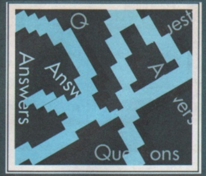
For all you Bub and Bob diehards, here's a brilliant cheat mode for Ocean's latest platform romp. Type 'CYNIX' during the game to enter cheat mode, then type:

C – for extra credits
T – to end a stage
D – to die
G – to kill all nasties
X – to skip to an extra level
B – for a bonus screen
F1-10 – to skip a particular level
M – to get all three stars
1-7 – to skip a stage.

PUSH OVER

Curvy Colin has set some dastardly puzzles to solve in this amazing Ocean game. Here are all 100 level codes:

Level	Code	Level	Code
1	00512	51	21534
2	01536	52	23582
3	01024	53	24094
4	03072	54	23070
5	03584	55	22558
6	02560	56	18494
7	02048	57	19006
8	06144	58	20030
9	06656	59	19518
10	07680	60	17470
11	07168	61	17982
12	05122	62	16956
13	05634	63	16510
14	04610	64	16511
15	04098	65	17023
16	12290	66	18047
17	12802	67	17535
18	13826	68	19583
19	13314	69	20095
20	15362	70	19071
21	15878	71	18559
22	14854	72	22655
23	14342	73	23167
24	10246	74	24191
25	10758	75	23679
26	11782	76	21631
27	11270	77	22143
28	09222	78	21247
29	09734	79	20735
30	08718	80	28927
31	08206	81	29439
32	24590	82	30463
33	25102	83	29951
34	26126	84	31999
35	25614	85	32511
36	27662	86	31487
37	28174	87	30975
38	27150	88	26879
39	26638	89	27647
40	30734	90	28671
41	31246	91	28159
42	32270	92	26111
43	31774	93	26623
44	29726	94	25599
45	30238	95	25087
46	29214	96	08703
47	28702	97	09215
48	20510	98	10239
49	21022	99	09727
50	22046	100	11775



Mat Broomfield is here with a cool flannel to swab your fevered brows and ease your problems.

UPGRADE UNCERTAINTY

Should I upgrade my Amiga 500 to a bigger and better machine, or should I perhaps buy a brand new computer altogether? Although my A500 is a super machine, I think that it's totally useless when put next to any other Commodore machine except the C64.

Andrew Rawson, Handsworth, Sheffield

I suppose it depends on what you want to use your computer for, and against which machines you're comparing it to. If you want to use it for graphics and you compare it against a Quantel Paintbox, of course the Amiga will look inferior. I've spent a great deal of time recently comparing the Amiga against 16-bit games consoles, and although there are a few outstanding titles on these machines, I (and many others) still think that the Amiga is clearly superior.

If you want to use your Amiga to play a few games, dabble with a few utilities, perhaps draw some pictures, or create some music, a standard A500 with expanded memory is more than enough. If you want to move into more serious areas, such as video production, 3D rendering, or programming, you will benefit with a faster machine with more memory. This doesn't necessarily mean that you have to buy an A3000; you can upgrade your A500 to the required level quite cheaply.

Incidentally, rumours of a new Amiga (provisionally called the A800), have now been confirmed and, by all accounts, the machine (which will supposedly be launched early next year) will form a reasonably-priced bridge between the A500 and the A3000.

COLOUR UPGRADE

I've owned a Citizen 120D+ printer since last Christmas, and I'm very pleased with its black and white printing, but would also like to have colour. I heard from a friend that I can buy colour upgrades for it. Is this true? If so, how good are they, where can I get them from, and how easy are they to fit?

David Cowhig, Cwmbran, Wales

Unfortunately, Citizen don't make a colour upgrade kit for the 120D+. However, don't worry too much, you can still print in colour using your printer. Care electronics have a special colour separation kit, complete with three coloured ribbons for £39.95. They are available for all the most popular nine-pin dot matrix printers, and let you build up colour images by printing each picture out three or four times using different coloured ribbons. Contact Care at 800 St Albans Road, Garston, Watford, Herts, WD2 6NL. Or call them on 0923 894064.

GAMES ARE SLOW

I own a 1Mb A500 and was considering buying a hard drive in the near future. After purchasing PSS's *Harpoon*, I became a fan almost at once, but when embarking upon large campaigns, there is a severe delay between mouse clicks and the onscreen response, sometimes even causing the program to crash.

I've heard of a piece of hardware called a maths coprocessor and, considering that the game revolves around constant equations and computations, I wondered if this would increase its running speed? Would a maths chip also affect the running of games such as *Rainbow Islands* and *Falcon*?

Darren Smith, Ashton-Under-Lyne, Manchester

I'm not entirely convinced that a faster processor would help. Two other possibilities spring to mind, and you can check them out to see if they improve the situation. When most programs load, they reserve a special area of memory for calculations called the Stack. If this area is insufficient, the program will almost certainly crash. You could try increasing the stack by going to CLI or Shell and typing STACK 30000 <return> before you load it. Alternatively, you could check the size of the current stack by looking at the program's startup sequence or using the Info (Information on 2.0 machines) menu option from Workbench to check its icon for a stack command.

Another possibility is that your computer doesn't have sufficient memory to support the stack size the program is requesting. If the program in some way allocates stack space according to its requirements, more complex campaigns would require more memory, and perhaps even 1Mb isn't enough.

Maths coprocessors generally require some form of board to slot into, such as a mother board or accelerator card. They simply enhance the maths functions of the machine. ICD produce a board called the *Adspeed* which improves the processor speed for all operations, not just the maths functions. The *Adspeed* costs £149.95 and is switchable, and will therefore only function when you want it to. Most accelerators are incompatible with arcade games, and have to be switched off in order for the games to run. Flight simulators are one notable exception to the rule because they're usually compatible and show a significant speed increase.

It is apparently possible to use a 68010 processor instead of the standard 68000, and this will yield a speed increase of between 16 and 80%. The installation is apparently quite straightforward. You can find out how to do it in the book The Best Amiga Tricks and Tips from Abacus. All good bookshops should either stock it or be able to order a copy for you.

MULTI-TASKER

I was given *Vista* for my birthday along with *Formula 1 Grand Prix*. I really enjoy both programs, but *Vista* takes almost an hour to render (draw) each picture. I know that the Amiga can run lots of programs at once, but I've only got 1Mb of memory, and both of these programs require that much to work. I was thinking of upgrading to 2Mb so that I could use both programs simultaneously, although that wouldn't leave any space for RAM buffers. I recently heard that I can add 2Mb, to give me a total of two and a half. I've noticed a lot of different boards on offer, including the SupraRAM and the GVP board.

I don't earn a lot of money, so can you offer me any advice, and tell me which one you would buy?

Richard Peacock, Crossgates, Leeds

Before I answer your main question, I must just make one extremely important point. You are completely correct about the Amiga's ability to multi-task, running two or more programs at once, but you should also be aware that multi-tasking takes up more than just RAM – it also requires processor time. The processor is the 'brain' of the Amiga, and any operation requires a bit of its time. When you're running two programs such as a word processor and a database simultaneously, there's no problem. Only the active program is occupying a significant amount of processor time. The inactive one is, at most, simply scanning the keyboard and mouse for activity.

The trouble with *Vista* and *Formula 1* is that they are both extremely processor intensive – in other words they occupy a large degree of the processor's time. That's why it takes so long to draw pictures in *Vista*. Some programs prioritise their calls upon the processor's time, and only become active when there are no programs of higher priority trying to use the processor. I doubt whether this is the case with either of these programs as they haven't been designed to multi-task.

The only real solution is to increase the speed of your processor with an accelerator of some description. See my

response to the letter headed GAMES ARE SLOW above. As for RAM upgrades, I think that the SupraRAM is one of the best 'professional' ones around, although certainly not the cheapest. It's flexible because you can upgrade it to as much as 8Mb, and it doesn't invalidate your guarantee or require any complicated installation because it plugs into the expansion port at the side of your computer.

BIT KNITTER RETURNS

Regarding Lorna Palmer's enquiry about knitting programs in the June issue, she may be interested to know that the UK contact for the *Bit Knitter* is Kamalini Trentham, Machine Knitting and Design Centre, High Cross House, High Cross, Aldenham, Herts. Tel: 0923 859242.

A demo disk is available for £5 and new products will soon be available.

Colin Yarnall, Wilmslow, Cheshire.

WHY A1500?

After using a German A500 with 2Mb and a second drive for two and a half years, I've decided to move on to bigger and better things. What are the advantages of the A1500 over the A500 apart from the extra expansion ports?

I'm looking at Diamond's '3000 Basher' pack. Will the hard drives and other peripherals be more compatible with an A1500 than with a 500, because I've heard that there are compatibility problems on the latter? Also, is it true that a 33mhz processor will disable many games? If so, will Diamond supply the pack without the processor?

Finally, and on a totally unrelated point, what exactly does the *Works!* package consist of?

R.Hoppe, Selebi Phickwe, Botswana

I've asked many, many people about the A1500, and they all seem to agree that the expansion ports are its only main asset. Mind you, it's not an asset to be overlooked, as they open the door to whole new worlds of hardware peripherals, such as 16-bit samplers, graphics cards, internal hard drives, etc. Whilst I'm not familiar with the '3000 Basher' pack, it sounds as if Diamond have put together a low-cost Amiga which has similar specifications to the A3000. Talking to a number of Amiga experts recently, I was advised that this is actually a much better, and more cost effective way of building a high-powered Amiga, than simply buying a 3000.

Many games don't like 25, 33 or 40mhz processors, but as far as I'm aware, all of these processors can be switched off so that the games will load and run normally. A1500s and A500s use entirely different hard drives and other peripherals, and the only 500 compatibility problems I've ever heard of, arise when people try to assemble incompatible extras. For example, most hard drives will work perfectly on an A500, but if you try to use a certain type with certain internal boards (accelerators and PC emulators), problems can arise.

On to your last question, the *Works!* contains a word processor, a spreadsheet and a database. The Platinum edition also contains a comms program for modem users.

DISK DRIVE LEAD

Can you please tell me where I can buy a replacement lead for my external disk drive as mine is damaged? Also, how many bytes does one cylinder of a disk hold?

Arran Hussain, Edmonton, London

I would suggest that you approach the manufacturer of your drive. If they can't help, try Videk, who supply cables for just about everything. Their address is: Unit 10, Bowman Trading Estate, Westmorland Road, London, NW9 9RN. Tel: 081 204 6690.

According to the documentation that comes with the Apple Macintosh's *MacWrite II* word processor, a disk is constructed as follows: 80 cylinders per side, two sides. A single cylinder on one side is called a track and it contains 11 sectors each of which is 512 bytes long. Therefore, a cylinder contains 11264 bytes (80x2x11x512/80=11264).

SAMSUNG SCART

There is a Scart socket on the back of my Samsung television, and I was wondering that, if I plugged my computer into it, would I get the same quality as a monitor? Which lead do I need to buy?

M.Abernethy, Enfield, Middlesex

No, you won't get the same quality as if you used a monitor, but you would notice a very significant improvement. TVs and monitors have different resolutions in exactly the same way as the Amiga does. Unlike the Amiga, though, they are not variable. The correct expression is Dot Pitch, and it describes how many monitor or TV pixels are used to create a single inch or millimetre of screen image. The smaller the dot pitch, the better the image.

Because TVs are essentially 24-bit (ie. they have 16.7 million colours available to them), they don't require such a high resolution to create a realistic impression. Add to this that all TV images are animated, so a single frame is never still long enough for your eye to detect its low resolution.

When you use a Scart lead, the RGB information is fed directly to the TV's processor, without being converted via a modulator. Therefore, the screen image is much sharper with better colour. I would definitely recommend a Scart cable, even if you're only using a TV.

Theoretically, Scart (or Europlugs) conform to a single standard, and any Scart cable will suffice provided it has the correct plug on its Amiga end. In practice, there seems to have been a recent change in the Scart standard, new TVs now require a special cable that includes a Jungle Chip (no kidding!). The cable apparently works fine with old style Scart sockets too. You can buy one for about £16 from Meedmore Ltd, 28 Farriers Way, Netherton, Merseyside, L30 4XL. Tel: 051 521 2202.

DATABASE DILEMMA

I have been searching without success, for a database that can handle numbers. I'm under the impression that a database cannot handle numbers in excess of eight digits – am I correct? I want to make a database to handle Premium bond numbers. Is there one available?

Lawrence Nelson, Oxford

Frankly, I'm amazed that you're having a problem. I have never encountered a database which doesn't handle numbers, and even the cheapest of them has no problem handling far more than eight digits. If the one you're using doesn't, perhaps the problem lies more in the way that you're defining the datafield when you're setting up the database.

Most databases require that you specify whether data should be numeric, textual, pictorial, etc., before you actually start entering data. Some also require you to specify the maximum size of the data that may be entered in a particular field.

Ensure that the field length is greater than eight characters and that it is of the numeric type. If, by some zillion to one chance, this doesn't help, try specifying your numbers as text fields. If you'll be entering numbers containing a various number of digits, you'll have to precede short numbers with zeros until they reach the number of digits of the longest number. For instance, if the longest number is 12345, the number 23 would be entered as 00023. The database will then sort and arrange the numbers exactly as you require.

Incidentally, many database programs can also handle long numbers using scientific (E.) notation. Try *Penpal*, *Organise!* or *InterBase*.

HEX HOCUM

I noticed in your *MED* tutorial, that you refer to some of the numbers as being in Hex. I've also come across this expression in other articles. What is Hex, and how does it work?

Steven Borland, Wimbledon, London

Hex is short for Hexadecimal and it's a counting system which uses base 16, as opposed to Decimal which is in base 10. Hex uses numbers 0 to 9 then continues A, B, C, D, E, F. F is equivalent to the decimal number 15.

In decimal, the columns reading from right to left, represent 1s, 10s, 100s, 1000s, 10000s etc, with each column being worth ten times the value of the column to its right. In hexadecimal, the columns represent 1s, 16s, 256s, 4096s, 65536s, etc. Each column is worth sixteen times the value of the one to its right. As you see, this results in a very compact numbering system, that requires less space to represent large numbers. It is also directly compatible with the Amiga's sixteen bit architecture, which also works in multiples of 16.

➤

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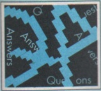


MOUSETERIOUS HAPPENINGS

I've recently started having problems with my machine. I have an A500 and a 32Mb hard drive. I often use the program with *SID*, and the directories always scroll straight to the bottom without me touching anything. Also, when using *DPaint III*, everything keeps flashing. The only way that I can remedy the problem is to install a program called *Lefty Mouse* which switches the functions of the left and right mouse buttons over.

I'm reasonably experienced with the Amiga, and I'm certain that the problem doesn't lie with the mouse itself as I've tried others, with the same result. This seems really strange, and I don't know what to do. Could it be the Amiga's mouse ports? It's a complete mystery why my Amiga has begun acting in this manner, and any advice to rectify the problem would be gratefully received.

S.D.Marlow, BFPO 25

It certainly sounds as if the mouse port is in some way defective. I assume that you are experiencing unusual occurrences with all mouse-controlled programs, and not just the two you mentioned? What happens if you unplug the mouse, do the disturbances stop?

I would suggest having your computer looked at by a professional but, if that's not convenient, you can always use the keyboard to simulate the mouse. Simply press down the right Amiga key and press a cursor (arrow) key to move the cursor around. Keeping the Amiga key pressed down, the left and right Alt buttons replace the left and right mouse buttons.

SAMPLE SCRAPE

I have been producing samples using *Technosound Turbo V2.9*, but so far I have been unable to play them back independently of the program. Is there any way in which I can either play the samples via CLI or convert them to a format which can be played using the *Red Sector Demo Maker* or another such module player?

I suspect that the answer may lie in the song sequencer that comes with the program, but whenever I try and save the samples to RAM disk, the program freezes up.

Daniel Page, Haverfordwest, Wales

Although the sequencer that comes with *Technosound* is capable of replaying samples in a song format, it is your least effective solution. *Technosound* saves samples in both IFF and Raw format, and there are innumerable Public Domain sequencers which are capable of replaying them. Any *Soundtracker* clone will do, and the results are compatible with the *RSI Demo Maker*. Of course, we mustn't forget the superlative *OctaMED Professional* program that we gave away on the July cover disk.

Any of these programs will let you include your samples as part of a song.

If you're recording single, large samples (perhaps an entire single), there are many sample player programs available that work from CLI and will simply replay a single IFF sample. One such is called *Sample Player* and is on TBag disk number five, available from Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton. The problem you mentioned about *Technosound* locking up, could be caused by insufficient memory, especially if you are recording large samples.

INSTALL IRRITATION

I need your help as there is nobody else to save me! I opened a CLI window and typed INSTALL, and received the message 'USAGE INSTALL [DRIVE] {DF0:|DF1:|DF2:|DF3:} [NOBOOT][NOCHECK]'. I then inserted the formatted disk to be installed and typed DF0: and received the message 'Unable to load DF0 Error 212'. I tried again, but this time I left the Workbench disk in before typing DF0, and this time I got the message 'Unknown command DF0'.

Am I doing something wrong? I tried it with my RAM expansion switched off, but received the same result. Please help.

John O'Neill, Chaderton, Oldham

There's a very straightforward solution to your problem. You have misunderstood the nature of the first message the computer gave you when you simply typed INSTALL. Whenever the Amiga responds with a line that begins with the word 'USAGE', it means that the computer is simply giving you information because you have used the wrong format for the command. It was not asking you for a drive, it was simply telling you that you had to supply the name for one when you used the command. Therefore, the correct format for the command would be INSTALL DF0: <return>

This will automatically install whatever disk is in the drive, and as you only have one drive, this will be the Workbench disk (as the Amiga needs to load the INSTALL command first).

To get around this problem, type INSTALL ? <return>. When the computer responds by saying 'DRIVE/A,NOBOOT/S,CHECK/S:', insert the disk to be installed and type DF0: <return>.

WHICH PRINTER?

I'm very interested in paint packages, DTP, Spreadsheets, etc. I would like to buy a relatively cheap printer to use with these packages. I have considered a bubblejet, but I've heard that they only print in black and white. What is *Flexidump*?

Could you also tell me what uses I could put the new Rombo sampler to as I play electric guitar and saw an ad for it in the mag?

Jonathan Izzard, Epping, Essex

Citizen and Star both make colour dot matrix printers in 9-pin and 24-pin versions. Star's LC200C and Citizen's Swift 24 are equally popular, and although they won't give you photographic quality printouts, they are adequate for home use. The new Swift is provided with a special Amiga printing program which performs similar colour enhancement functions as *Flexidump*.

You are right, most bubblejet printers don't let you print in colour, and those that do tend to be very expensive. However, you do get a great increase in monochrome quality with these printers, which operate at the equivilent of a 48 or 64-pin printer (300-360 dots per inch).

***Flexidump* is a dedicated printing program, which not only enhances the clarity of both colour and monochrome images, but also lets you create posters many pages wide, and web dumps containing numerous duplicates of a screen on the same sheet of paper. To find out more, check out the review in last month's magazine.**

The Rombo sampler, like any other, lets you record (digitise) sounds into the computer so that you can include them in your own work. Depending on the available memory, and the rate (quality) at which you record them, these sounds may be as brief as the single thump of a bass drum, or as long as an entire album. You can use the digitised sounds (samples) as single instruments, or as the entire soundtrack for a game or demo.

There are two main advantage to using sound samplers:

1. You can create your own instruments for use in music.

2. The Amiga can only play four samples at a time. By using a sampler, you can digitise single samples that may contain multiple elements of a song. For example, the drum track and bass line.

You could, of course, sample your electric guitar, and use the sample in computer-generated music using a package such as *OctaMED Professional* which we gave away on our July coverdisk. If you missed it, though, there's a special back issue offer which can be found elsewhere in the magazine (page 130, to be precise).

Be warned, though, that sampling can be very memory intensive, so you will have to be frugal with your selections.

ANY PROBLEMS?

If you have any questions of a technical nature send them to me, Mat Broomfield, at Q&A, CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. That's the end of this month's thrilling episode, see you again next month.

PART 3

OCTAM

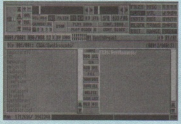
If it were a car, *OctaMED Pro* would have a drinks cabinet and TV in the back – it's probably the most complete music package you'll ever find. In part three of this comprehensive user guide, Mat Broomfield continues his look at this accomplished music package. As mentioned last month, we're going to take a look at some more of the special commands that can be applied to your music. Before we do that, though, I think it will be extremely helpful to take a closer at the way that the program handles instruments...

A CLOSER LOOK AT SAMPLES

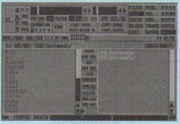
Last month, I showed you how to add your own samples to *OctaMED's* internal sample list so they can be loaded more quickly. By now, you should already have added the new samples we gave you to the sample list. If you haven't, go back to last month's issue and do that before we go any further...

Right, let's load up an instrument and take a closer look.

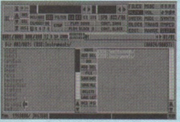
1. Click on the SLIST button in the Options palette.



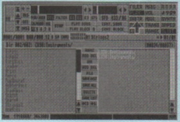
2. Click on the words 'CU38:Instruments/' in the right-hand sample list window. A new list of instruments starting with the word 'Alien' should appear in the left-hand window.



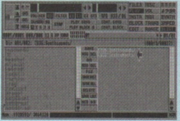
3. Click on the downward scroll arrow at the bottom centre of the screen, and scroll through the list of samples until the instrument Strings2 becomes visible.



4. Click on the word Strings2 and the instrument will be loaded within a few seconds. To test that it has been loaded properly, press the letter Q, and you should hear the instrument play.

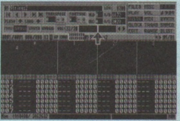


5. Click the INSTR button in the Options Palette to go to the Instrument Settings Window.



This window is where you can temporarily tailor each instrument to your requirements. Although it doesn't give you the same flexibility as the sample editor in terms of restructuring an instrument, it lets you alter the defaults of presampled instruments, and it's ideal for making temporary adjustments for a single piece of music.

SAMPLES, LOOPS AND THE SAMPLER



If you look towards the top right-hand side of this window, you should be able to see the word 'LEN', besides which is the number 9700. This figure represents the size of the instrument in bytes. Below

ED

this are two windows titled 'R/B:' (Repeat Begin), and 'R/L:' (Repeat Length). These are connected with setting a loop within an instrument. The number 6672, beside the letters 'R/B:' signifies the starting position of the loop, whilst the number 3028 denotes its length.

LOOPS

Loops are extremely useful, and to understand them better, let's go to the sampler. Click on SMPED from the Options Palette and the lower half of the screen will switch to show you the Sample Editor.

WAVEFORMS

Running horizontally across the middle of the screen, you'll see the Waveform Window. The current sample is shown as white squiggles against a black background. As you may know, when a sample is recorded, it is converted into numbers representing its amplitude (volume) and frequency (pitch). Click the Zoom In button until the pink number at the top right of the Waveform Window reads 75. You'll notice that the waveform has become much simpler, and is composed of lots of little 'steps'. Each step represents a different number, and it is these that the Amiga converts back into audible sound. Because most samples consist of thousands, sometimes even tens or hundreds of thousands of these numbers, the waveform is not an exact representation of the sample, it merely shows the general trends in amplitude and pitch.

ZOOM

Next, click the Zoom Out button until the pink number reads 9700 again. If you look at the last third of the waveform, you'll see two blue lines, indicating the current loop. When the sample is played, the area within the lines repeats indefinitely and is good for creating sustained effects. To see how this works, press the letter Q. A thin white line will start moving across the sample from right to left, but when it gets to the very end of the sample, it will only return to the first blue line before starting again. The first blue line is the Repeat Begin, and the number of bytes between the first and second line is the Repeat Length.

TRANSPOSING AND FINE-TUNING AN INSTRUMENT

Now, if you look back at the Instrument panel at the top of the screen (it should still be there!), you'll notice two boxes labelled 'Transpose' and 'Fine Tune'. These are used to alter the pitch of an instrument so that it sounds higher or lower.

'Why would I want to do that, when I can simply enter a different note in the Note Editing Window?' I hear you ask, (you did ask that DIDN'T you?). The reason is very simple: every sample has a natural pitch at which it plays. Ideally, this would always be C, so that, when you enter the note C in the Note Editing Window, the sample plays that note. Unfortunately, this is often not the case. Many samplers are set up to record samples tuned to the note E flat. This means that when you enter a C in the Note Editing Window, you actually hear a note which is three semitones higher than it should be.

Remember, a semitone is the distance between one note and the next highest or lowest on a piano keyboard. For instance, the distance between C and C sharp, or E and F (there's no E sharp, as you'll see if you look at the keyboard diagram we printed the month before last).

Of course, you could resample the instrument so that it was tuned to the note C, but you might have a good reason to leave it tuned as it is. No problem, if you temporarily need to change the tuning of a sample, you can use the Transpose feature. Beside the Transpose window, there are two small gadgets bearing a minus and a plus symbol (- +). When you click these, they lower or raise the current instrument's pitch by one semitone. Therefore, to re-tune our E Flat sample to a C you'd click the minus arrow until the number reads -3.

As you're not actually altering the sample, and merely the way that *OctaMED* plays it, this will only affects the current song, and if you want to re-tune the sample for additional songs, you'll have to go through this process each time. Retuning information is saved with the song.

The Fine Tune option works in exactly the same way as the Transpose feature, except it lowers and raises the pitch of a note in steps of one eighth of a semi-tone! Generally speaking, these steps are too small to distinguish one from the next, but some types of music, particularly Chinese and Indian, use instruments which are capable of playing quarter and eighth tones, so this level of precision is especially useful in such cases.

INSTRUMENT VOLUME SLIDERS AND THE VOLUME COMMAND

At the bottom of the Instrument Settings Window, you'll see the volume slider. The numbers to the left represent the default volume for this instrument in both decimal and hexadecimal. By moving the slider, you can change the volume for the current instrument throughout the entire song. For example, suppose you've created a song in which a bass drum plays, but it seems too loud in relation to the other instruments. Rather than work through your song decreasing the volume each time it occurs, by decreasing its volume in the Instrument Settings Window, you create the same effect.

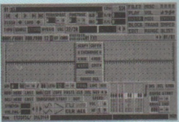
Please note that all volumes given within a song using the C command are expressed as a percentage of the instrument's maximum volume as specified in the Instrument Settings Window. For example, if the instrument has a maximum volume of 64 (decimal) in the Instrument Settings Window, the command C32 will make it play at half volume. However, if the instrument's maximum volume in the Instrument Settings Window is decreased to,say, 32, the command C32 will actually cause it to play at quarter volume.

MORE COMMANDS

OK, enough with the instruments! Let's continue looking at the commands that we started examining last week.

If you've been following the tutorial so far, you should understand the composition of a note, and know where the special effects commands are placed. You should especially understand where and what the left and right data bytes are. If you don't, I suggest that you go back and reread the introduction to the 'Player Commands' section of last month's tutorial.

Command E – Synth Jump



Although *OctaMED* is at its best when playing sound samples, it can also be used to create its own synth(etic) sounds using the Amiga's internal sound generators. These are created by joining several simple waveforms together. For example, an instrument may be comprised of up to three sine waves which are then followed by a square wave. The order in which these waves will play within a synth sound is defined by the Waveform sequence list. This useful command lets you jump straight to a particular place within the Waveform sequence list – an intro, for example – and proves surprisingly easy to use.

For example:

C-2 10000 – In this case, instrument 1 should be a
synth — 00000 or hybrid instrument.

— 00000
— 00E03 – Makes *OctaMED* jump to position 3 in
the — 00000 Waveform sequence list.

DO YOU HAVE A PROBLEM?

***OctaMED* is a truly excellent program, but getting the very most out of it can be complicated at times. If you're having any problems using it, you'll be glad to hear that CU is starting a special *OctaMED* help column. Send in any questions that you have, and I'll try to answer them for you at the end of my column or in Q&A each month. Address your letters to *OctaMED* Help, CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.**

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OCTAMED

Command F – Miscellaneous

Unlike the other commands which only perform a single function, the F command has lots of different functions according to the values given in the data bytes.

Command F00 – Jump To Next Block

This causes *OctaMED* to jump to line 000 of the next block in the Block Play List. If there is only one block, *OctaMED* will go back to the beginning of that. It's better to use this command than to change the length of the blocks as it takes up less memory. For example:

C-2 10000
—- 00000
C-2 10F00 – This note is played then the program jumps.
C-2 10000 – This note will never be played.

Command F01 To FF0 – Change Primary Tempo

Although the command has a hexadecimal range between 00 and F0 (0-240 in decimal), speeds between 0 and A (decimal 0-10), should only be used when working in Soundtracker mode. As seen here:

C-2 10F0B – Sets the slowest possible speed.
—- 00000 – Speed remains slow.
—- 10FF0 – Sets the fastest speed.
—- 10F78 – Sets a medium speed.

Although this command goes up to FF0, you're most likely going to require speeds between F20 and F40 (decimal 32 and 64).

Command FF1 – Play Double Note

Plays a note twice really fast. In theory, this is the same as playing the original note twice at double the speed, but you actually end up with two very fast notes and a brief pause. Nevertheless, this is useful for creating very fast rhythms. Load up a drum, set a very slow tempo, and try the following:

C-2 10000
C-2 10000
C-2 10000
C-2 10FF1 – Plays this note twice, very fast

Command FF2 – Delay Start

This slightly delays the start of the note, but then plays it much quicker once it begins. Load up a drum, set the Primary tempo slider to 33 and try the following:

C-2 10000 – These notes are just for comparison.
C-2 10000
—- 00000
C-2 10FF2 – The effect starts here.
C-2 10000

Command FF3 – Play Treble Note

This is the same as FF2 but three notes are played – for example:

C-2 10000
C-2 10FF3 – Plays this note three times, very fast.

Command FF8 – Filter Off

The Amiga has a built-in sound filter which is meant to remove unwanted hiss from sound samples. Unfortunately, it also muffles them. This command turns the filter off. You can see that it's worked because the power light on your computer will dim or go out. Note, the filter is off by default, so you won't see anything happen unless you've turned it back on.

Try this:

C-2 10FF8 – Low pass filter turned off.

Command FF9 – Filter On

This simply turns the low pass filter back on. You should see the power light come on or get brighter – ie:

C-2 10FF9 – Low pass filter turned on.

FFD – Change Channel Pitch

This command changes the pitch of the channel to that of the note. The note itself is not immediately played. Load up the Strings2 instrument to try the following:

C-2 10000 – The note C in Octave 2 is played normally.
—- 00000
C-1 00FFD – Now, the pitch is changed to C in octave one —– 00000 and will affect how the sustain part of the —– 00000 note sounds.

Command FFE – End Of Song

This command tells *OctaMED* to stop playing. Use it at the end of a song when you don't want it to loop back to the beginning. As seen here:

C-2 10000
—- 00000
—- 00FFE – Stop playing now.

Command FFF– Stop Playing Note

With sampled sounds, this is equivalent to the command C00 (set volume to zero). However, it also works with MIDI. It simply stops the current note from playing.

C-2 10000
—- 00000
—- 00FFF – Turn off the note now.

There are many new commands which are unique to *OctaMED Professional 3.0*. So that users of earlier versions of the program could also benefit from this tutorial, I haven't described them yet. Many of the commands described here, and in last month's tutorial, are only for use with samples, hybrids and synth sounds. MIDI users will find that they have completely different effects. Needless to say, I will be describing how to use them at some point in the future, but if you're desperate to get the most of the program right now, you'll find a text file called 'NewFeatures' in the Docs directory of the *OctaMED* cover disk that we gave you with the July issue. This summarises all of the new features, especially the extra MIDI capabilities of the program.

NEXT MONTH In the fourth part of our guide, we'll be looking at how to enter sheet music, both using the notation screen and manually. At the end of the tutorial, you'll be able to enter all your favourite pop songs from music books – unfortunately, we won't be telling you how to dress for that all-important Top Of The Pops debut. See you then.

DO YOU KNOW YOUR ONIONS?

Do you know what's what about *Music X*? Or do you consider yourself the World's leading authority on *Moviesetter*? If so, then CU Amiga – Britain's fastest-growing magazine – wants to hear from you.

In our attempt to cover virtually every aspect of the Amiga and its software, we are currently on the hunt for comprehensive guides to all the most popular utilities and software. We don't mean the likes of *DPaint* and *Photon Paint*, as these are more than adequately covered in other features in the magazine, but there are dozens of users out there who may be struggling with, say, *Sculpt 4D* or *ProPage* – and if you can help them, why not earn a few quid doing it? Yes, you did read that last bit correctly, we are willing to pay for well-written and concise guides.

To put yourself in the running, simply give Dan Slingsby, CU Amiga's Editor, a call on 071 972 6700 and talk to him about your proposal. However, be warned, that there is a lot of work involved and that all submissions must be supported with step-by-step illustrative materials, such as screen shots or specially-drawn IFF diagrams.

So, if you want to join the editorial ranks of the winning Amiga team, give us a bell. Or if you have an idea for a utility you're struggling with, drop us a line and we'll try to help...

making the most of your AMIGA

See those Utah Saints? That's you that is. Or at least it could be, after a bit of practice with your sampler. Tony Horgan takes a look at some ways of making your Amiga sound like a whole heap of expensive recording gear.

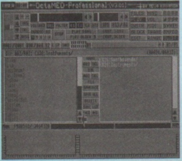
RAGGA TIPS

Have you ever heard a record on the radio, and thought 'I could have done that on my Amiga'? I know I have. Take a record like SL2's 'On a Ragga Trip', for example. If you break it down into separate sounds, you'll find it's made up of four main parts:

1. **A fairly short vocal that's been looped and stuttered**
2. **A very simple bassline**
3. **A catchy riff played on a very short sampled chord**
4. **A raving drum loop**

There's absolutely no reason why that record couldn't have been sampled, composed and recorded on a standard 1Mb A500. The same could be said for Altern 8's 'Hypnotic St8', Rhythmatic's 'Give Yourself to Me', and even Cola Boy's 'Seven Ways To Love'. Add a cheap MIDI synth to the setup, get someone to sing over your backing, and you're into KWS territory.

For the moment, we'll assume all we've got to work with is a basic Amiga, a £30 sampler and something like MED or Protracker for the sequencing. Let's also assume we're writing dance music of some kind. So what's the first step on the road to hit record making? How about...



Thanks to the flexibility of software like *OctaMED*, mixing has never been so easy...

THE IDEA

Yes, it does help if you've got an idea or two kicking around before you get started. Decide what kind of mood you want to create, whether it's happy, ominous, camp, ecstatic, mellow or whatever. If you've got a particular theme in mind, then so much the better. Once you've got an idea of what you want, you can set about putting theory into practice.

THE SOUND OF NOW

Before you delve into that stack of 'ST-00' sample disks (you know, the ones you got years ago with your first *'Tracker* program), take time out to see what sounds are being used on today's records. For example, hardcore and rave music currently favours subliminal sub-basses, slightly more upfront 'blobby' basses, a couple of live drum loops mixed into one, and hooks made up of vocal samples and staccato chords. The more soulful dance records are going in for simple electric organs and the ever-popular strings, while distant sounds of Mother Nature serve as a backdrop for the occasional ambient house tune.

Trends in dance music do move on pretty quickly, though, and as you read this, new fads will be developing. Keep your ear to the ground, unless you want to end up like Status Quo, in which case you'd better grow your hair long, and learn how to play a 'Rum-ti-Tum' line on an electric guitar for 25 years.

NO EXCUSES

Now that you're competing with the big boys, there's no room for excuses. Offer a record company a track that's 'Good, considering it's done on an Amiga', and you won't have much luck. The fact is that DJs, record companies and the public couldn't give a toss what gear you used to make the record, as long as it sound good. Even so, it's not a good idea to advertise the fact that you work with a 1Mb, 8-bit sampler. Let them assume you've made the record with professional spec gear, and they won't have any prejudices. The last thing you want is a black mark against your music before it's even had a hearing.

Before you can realistically hope to create anything of broadcast-quality, you'll have to hone your sampling technique. Once you can grab samples without a noticable drop in clarity from the original, you're ready to roll. See last month's column for some tips on how to improve your sampling.

QUART IN A PINTPOT

The biggest problem now is the Amiga's limiting four tracks. You could easily fill those with the drum pattern alone, so how are you supposed to squeeze in the rest of your samples? The trick is to the make everything count, and not to take up tracks with unnecessary sounds at the expense of key samples.

When it comes to drum sounds, sampling a complete breakbeat is the best way to economise on tracks. It's often a good idea to chop the beat into four, eight or sixteen parts, so that you can rearrange it to suit your needs. If you like to make up your own beats, you can still get a decent groove from a single track. Work out the beat with four tracks first. Look to see which sounds are triggered together, and mix the two, three or four samples into one. You should then be able to reconstruct the beat on a single track, using your combined samples.

You could choose to sample a beat with a bassline, which would save you another track, but then you're getting on to rather dodgy ground. Generally, no-one gets too uptight about people using their drum loops, but you can expect a bit of strife (not to mention demands for cash from the original artist) if you over-step the mark.

SHUT UP AND SUE

If you do sample anyone's work, you should be prepared for the consequences. Any blatant samples will come to the attention of the artist and record company that owns the copyright. The best outcome you can hope for, is to have a reasonable cut of the profits go to the original artist/record company. These financial settlements can go either way though. While some make a good living this way, others have had sobering experiences. DNA's remix of Suzanne Vega's 'Tom's Diner' sold over five million copies worldwide. DNA earned a mere £4,000 from the record.

That must sound like a fortune to Shut Up And Dance, who recently saw their potential number one 'Ravin' I'm Ravin'' shot down in flames. Party-pooper Mark Cohn objected to the samples from his song Walking in Memphis, nd ordered its withdrawal after a week at number two in the chart. All proceeds went to charity, leaving SUAD with nothing but a bit of controversy to their name. So watch out!

FAME AND FORTUNE

Fortunately, fame and fortune don't necessarily go hand in hand when it comes to dance music. If being mobbed by fans while you're shopping in Tescos doesn't appeal, you can get away with anonymity. So, even if you're ugly as sin, don't be put off by nightmares of appearances in Smash Hits. If you want it both ways, you could take a leaf out of Altern 8's book. Go on telly with a silly boiler-suit and what appears to be a gasmask over your face, then take off the mask, slip into a pair of jeans, and pop down to the shops unaccosted.

So that's it. Easy eh? You'll have to excuse me now. I've got a number one record to write – not to mention a gasmask to buy...

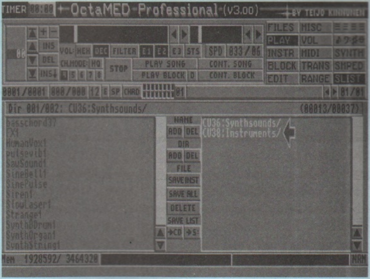
FALSE MOUSTACHE

Use a bit of imagination, and it's possile to disguise your samples, so that even the original artist wouldn't recognise them. Play your sample back at a different speed to the original, put it with a new beat, bassline and chords, and not only is it harder to detect the borrowed sound, but the case for the prosecution is diminished to a degree.

THE GOOD BIT

While there's a good market for dance records at the moment, there are also a lot of people making them, so you've got to make yours stand out from the crowd somehow. This is where 'the good bit' comes into play. It could be a weird vocal as in Utah Saints' 'Something Good', or a simple but hypnotic bassline like The Future Sound of London's 'Papua New Guinea'. It could just be a good tune and catchy chorus.

Then there's the novelty record. I should think anyone working on a Charly-style record has missed the boat, but then I thought that before the Trumpton and Sesame Street records appeared. It seems there's life in the old dog yet.


TIMER 00:00
OctaMED Professional (v3.00)
BY TEIJO KINNUNEN
00
INS
DEL
INS↓
VOL: HEX DEC
FILTER
E1 E2 E3 STS
SPD 033/06
CH.MODE: HQ
4 5 6 7 8
STOP
PLAY SONG
PLAY BLOCK
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CONT. SONG
CONT. BLOCK
FILES
MISC
PLAY
VOL
INSTR
MIDI
SYNTH
BLOCK
TRANS
SMPED
EDIT
RANGE
SLIST
0001/0001
000/000
12
E
SP
CHRD
01
01/01
Dir 001/002: CU36:Synthsounds/
(00013/00037)
basschord37
FX1
HumanVox1
pulsevib1
SawSound1
SineBell1
SinePulse
Siren1
SlowLaser1
Strange1
Synth8Drum1
SynthOrgan1
SynthString1
NAME
ADD DEL
DIR
ADD DEL
FILE
SAVE INST
SAVE ALL
DELETE
SAVE LIST
→CD →S:
CU36:Synthsounds/
CU38:Instruments/
Mem 1928592/ 3464328
NRM

Simplicity is often the best ordof the day. Several hit records have got by with a simple catchy loop, which is then scratched and repeated.

ORIGINAL ROUTE

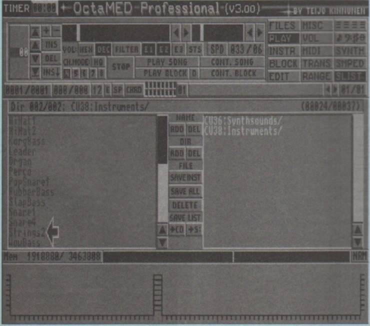
For those who fancy a more original approach, there are a number of options. You don't get many purely instrumental records breaking into the charts, mainly because vocals provide a focal point for the listener to latch onto. But you don't need a rack of expensive keyboards to come up with a catchy tune. Remember Tricky Disco? That was one hit that used comically low-tech bleeps to excellent effect.

There's still hope for those who like the idea of original vocals, but can't sing a note. Add a cheap mixer to your setup, and you could overdub rapped or spoken verses, via one of the voice-changing real-time effects options found on the likes of *Audio Engineer*, *Audition 4* and *Techno Sound*. Better still, team up with someone who can sing.

MIX AND MATCH

Once you've finished off the track, it's not a bad idea to try some alternative mixes. If you want radio airplay (your best bet for chart success), have at least one mix that's around three and a half minutes long. Doing an extended 12" mix is a fairly straightforward exercise. It's surprising how much difference a new breakbeat will make to the overall mood of a record. Without changing the tempo at all, a different beat can tame the most hardcore of tunes, while a raging drum loop can bring new life to a previously laid-back mix.

With all your mixes finished, you've then got two main options for getting them on general release. The first is to make up some demo tapes, and send them out to record companies and independent labels. The advantage of this is that it requires very little financial outlay, but it can be a bit of a lottery. If you can afford it, probably the better option is to get some records pressed, sell them to independent shops, and give out copies to DJs. At least that way people get to hear your music, and once you start selling worthwhile amounts, the record companies will start to take notice. Who knows, as Del Boy says: 'this time next year we'll be millionaires!' Just don't bank on it, that's all!


TIMER 00:00
OctaMED Professional (v3.00)
BY TEIJO KINNUNEN
00
INS
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E1 E2 E3 STS
SPD 033/06
CH.MODE: HQ
4 5 6 7 8
STOP
PLAY SONG
PLAY BLOCK
D
CONT. SONG
CONT. BLOCK
FILES
MISC
PLAY
VOL
INSTR
MIDI
SYNTH
BLOCK
TRANS
SMPED
EDIT
RANGE
SLIST
0001/0001
000/000
12
E
SP
CHRD
01
01/01
Dir 002/002: CU38:Instruments/
(00024/00037)
HiHat1
HiHat2
KorgBass
Leader
Organ
Perco
PopSnare1
RubberBass
SlapBass
Snare1
Snare4
Strings2
WowBass
NAME
ADD DEL
DIR
ADD DEL
FILE
SAVE INST
SAVE ALL
DELETE
SAVE LIST
→CD →S:
CU36:Synthsounds/
CU38:Instruments/
Mem 1918880/ 3463808
NRM

Obviously, at sometime you are going to need to add voices to your tune. *Audio Engineer* and *Audition 4* are perfect for this. They just use good old *OctaMED* to mix them all up.

NEXT MONTH

So is what Tony says as easy as it sounds? Next month, he takes another look at the Amiga's capabilities in producing professional-sounding music. Stay tuned...

CLUB CALL

Computing was never meant to be a solitary affair! Hundreds of computer groups exist around the country to help you get the most out of your Amiga. If you've got a problem that needs solving, want to buy hardware or software at cost price, or just want to converse with fellow enthusiasts, there's a club somewhere near you. Here are some of the first replies we've received.

AMIGA VIDEO PRODUCERS GROUP

**8 Rochford Close, Grange Park, Swindon,
Wiltshire, SN5 6AB.
Tel: 0793 870667**

The aims of the Amiga Video Producers Group (AVPG) are quite simple: they are out to promote and assist anybody who wishes to produce video material using the Amiga as a production tool. The group was founded more than 18 months ago by Jim Strutton, a man with more than 22 years experience in the computer industry, latterly working on very high-level graphic systems. 'I initially bought an A1500 to aid me in producing video and fell straight into a black hole concerning information about using the Amiga for video production, beyond simple video titling using *Deluxe Paint*,' explains Jim.

However, with a bit of work, Jim resolved his problems and started to make progress, to the extent that he now runs a video production business based on using middle-range video equipment and a greatly-enhanced Amiga 1500 as the critical tool.

The AVPG is a vehicle for Jim to share his knowledge with other users as well as pooling other members' knowledge and expertise for the common good. Membership ranges from semi-professionals, who aim to derive some income from video, to pure enthusiasts who do it for fun. Membership currently stands at just over 50, but is growing at the rate of about one or two a week. Meetings take place in Swindon once every three months, mostly because that's where Jim lives, but also becase the area has good road and rail links. The meetings normally take up a whole weekend, from Friday evening to Sunday lunchtime. They take the form of a project, with members attempting to script, plan, shoot, edit and produce a video during that time.

At the moment, there's no charge for membership, although an SAE is politely requested if you want to receive a reply. There's a plan to produce a bi-monthly disk-based magazine for a charge of about £10 per year. Once the demand reaches the 25 subscribers mark it will be viable to produce. Interested members can obtain a free information pack by sending an SAE to the above address. There's also an introductory video available to members for £16.95. This was produced to introduce the concepts of DTV to the first time user. At this time, it is being revised, to take account of all the changes in the Amiga world, but the new version should be ready by the time you read this.

THE PENNINE AMIGA CLUB

**26 Spencer Street, Keighley, West Yorkshire,
BD21 2BU.**

With its membership standing at 826, the Pennine Amiga Club is already well-established, drawing members from all over the world and not just along the M62! The club is even opening a branch in Texas this year.

Membership and ALL services are free of charge. Members only pay for things they buy. Because of the size of PAC, the club can get almost any item from almost any supplier at a discount price. The club is non-profit making, with the organisers receiving no reward except the satisfaction of seeing the club grow and prosper. Membership is open to anybody, regardless of their computing ability, providing they own and use an Amiga.

AMOS PROGRAMMERS' EXCHANGE

**7 Majestic Road, Hatch Warren, Basingstoke,
Hants, RG22 4XD.**

If you're one of the thousands of *AMOS* users, then you'll certainly be interested in this new club. The *AMOS* Programmers' Exchange is planning to start a new disk magazine, run exclusively by and for *AMOS* programmers. The subscription will be £15 per year in the UK, £18 for overseas subscribers. At the moment, the club is just finding its feet, so any help would be gratefully appreciated.

NORTHERN IRELAND AMIGA USER GROUP

**98 Crebilly Road, Ballymena, Co. Antrim,
BT42 4DS.**

We were sent very little information about this group, other than they produce a regular newsheet to keep members in touch with each other. A disk magazine is also currently being put together.

AMIGA USERS KLUB (BODMIN)

**1 Windsor House, 19 Castle Street, Bodmin,
PL31 2DX.**

The Amiga Users Klub (Bodmin) was started by Jack Talling in 1987 when he realised that a number of Amiga owners would be experiencing exactly the same problems he was! The jump from the ZX81 via the Spectrum to the Amiga 500 was a big leap as far as getting to grips with the like of Amigados, Workbench, etc, was concerned.

From a small gathering of three, the club soon grew to its current tally of twenty members. Meetings are held every Friday evening from 6.30 until the last one leaves. All computer subjects, from animation to music to spreadsheets to programming are covered in an informal atmosphere.

There is no membership fee or Committee, just a container for refreshment funds and an eager group of Amiga owners wanting to learn from each other. Beginners are especially welcome.

SHROPSHIRE AMIGA LINK

**2 Dodmoor Grange, Randlay, Telford,
Shropshire, TF3 2AW.**

The main aims of SAL are:

1. Generate communication between Amiga users.
2. Help beginners get to grips with the Amiga
3. Ensure members get the most from their software with an advice helpline to answer any queries.

Full membership costs £15 per year which includes access to a telephone helpline, a database of cheat modes, a small PD library, cut price disks, and a club disk magazine, Worktop. Membership hasn't even reached the 'teens yet, so any input or support from readers would be very much appreciated. So, do yourself a big favour, and get writing...

GET IN TOUCH!

If you run a club specifically aimed at the Amiga owner, get in touch. We'll promote your club through these pages, as well as provide a free subscription to CU Amiga. Send all entries to: Dan Slingsby, Amiga Clubs, CU Amiga, 30-32 Farringdon Lane, Farringdon, London, EC1R 3AU.

NEXT MONTH

MULTIMEDIA IS GO! (...AGAIN)

Yes, I know we said our multimedia feature was going to be this issue, but if things ran as smoothly as we wished, then we wouldn't be able to give our Publisher a heart attack each month. Thus, our next issue will be taking a look at all things multimedia as we show you how to transform your humble Amiga into the workstation of the future. We'll be reviewing some of the best authoring systems available to help you combine graphics and sound into your very own multimedia extravaganza. Will the multimedia revolution change the face of computing for ever? Also on show will be the definitive head-to-head between two of the most prominent CD-ROM platforms. Which machine will come out tops? The only place to find out is in the next issue of CU Amiga.

GAMES BONANZA

With the big software houses gearing up for a deluge of games in the coming months, CU AMIGA is there with joysticks wiggling with delight as we try out all the latest games (and before you, too!!). Games scheduled to appear include Gremlin's *Lotus 3*, Origin's *Wing Commander*, Sir-Tec's *Crusaders Of The Dark Savant* (again), and countless other goodies. Be here for the most comprehensive and thorough game reviews of any magazine.

BOOKWORMS START HERE

There are certainly a lot of books available that detail all you could possibly ever want to know about the Amiga, but which ones are any good? The CU Amiga bookworms have been plying through a library full of the very best Amiga books and giving their verdicts on what's hot and what's rot. We'll be taking a look at all the latest hints and tips books as well as an extensive round-up of the many technical books that adorn the bookshelves of your local computer store.

WHICH AMIGA IS BEST FOR YOU

With so many different Amigas vying for your cash, it's difficult to know which one to choose. If you're thinking of upgrading to a higher spec machine or considering buying an Amiga for the first time, here's where to look to find out which model's best for you.

ART GALLERY

Our art gallery section kicks off with a fantastic selection of work produced by our readers. If you're a budding artist, this is the place to look for hints and tips on improving your technique. If you've produced a masterpiece and have saved out your pic in various stages of completion, then why not show off your work to the rest of the Amiga world?

PLUS!

TWO RED HOT DISKS

Gremlin's *Lotus 3* is ready and waiting to be put through its paces in the most eagerly-awaited playable demo of the year. Also on show (hopefully, and with a prevailing wind) will be Sir-Tech's *Crusaders Of The Dark Savant*, the latest installment in the on-going Wizardry series. Of course, there's a lot more on offer, as we'll also have another fine selection of complete games to play, and there'll be a few surprises in store, too. Another packed disk full of all sorts of top-quality programs. There'll hopefully be another full-price utility on offer, as well as the best programs drawn from the Public Domain. Plus, there'll be yet more samples to use with our *OctaMED Pro* giveaway and some more Star Trek clip art. And don't forget, there'll be extensive documentation to help you get the most out of all the programs we use. We spoil you, we really do...

Contents may be subject to change without notice.

CU AMIGA – OCTOBER ISSUE ON SALE 26TH SEPTEMBER.

pirate problems

Piracy has always been a problem. But what, if anything, can be done to stop the perpetrators? Steve Keen talks to the men in the front line.

MONEY DOWN THE DRAIN

It may surprise you to know that, for all the moaning software houses make about how much money they lose to piracy every year, no accurate survey into the problem has ever been conducted. However, in 1990 a thorough investigation was conducted as to the losses suffered on the business side with some incredible results. In England alone, business software manufacturers lost £300 million, with an incredible $4.6 billion lost just in Western Europe. With this in mind, we spoke to the men in the front line about what can be done to reverse the trend and curb the pirates' appetites.

Roger Bennett is the General Secretary of ELSPA (European Leisure Software Publishers Association), the body responsible for protecting the interests of more than 80% of the software companies in Britain. He said: 'We are taking great strides towards ridding the industry of this menace. It's common knowledge now that we have invested £33,000 in FAST (Federation Against Software Theft) this year alone so that they can provide themselves with a full-time professional investigator who specialises in hunting down the pirates and taking action on our members' behalf.'

ELSPA have long been associated with FAST and this latest action is nothing new. Most of us can remember the somewhat disturbing adverts in the computer press not long ago, depicting pupils turning in their pirating teachers to FAST and being rewarded with a £1000 cheque. But how successful have they been? Roger continues: 'With the new-found steam that FAST and ELSPA have created we've succeeded in a number of raids and prosecutions. We've just this month paid out another £1000 pounds for a conviction in Ipswich which, considering the legal problems of such a case, only took two months from the initial phone call to its fruition. We are currently totally revamping our ad campaign. This time we're concentrating on educating the public so they realise the pitfalls and consequences of buying and using unauthorised software.'

MONEY FOR NOTHING?

On the other side of the coin, FAST's representative, Bob Hayes, never ceases to be amazed as to where the 500 or so phone calls they receive every year come from. 'We get a lot from children/young teenagers, even businessmen, after a reward,' he claims. 'But an increasing amount of people who've recently been made redundant are turning in their former company for using pirated software. We're even getting calls from people still at work who are being forced to use copied software by their bosses and risking their jobs by refusing. So you can safely say that attitudes are changing and the message is finally getting through. We recently dealt with a case concerning the Mirror Buildings where over 80% of the software being used was copied and passed throughout the company. There can't be an office in the land that doesn't do that or thinks nothing of it. But, if you can imagine 2000 copies of *MacWrite 2* at £200 a time, in one such building, it works out to be a very expensive loss for Apple.'

WHEEL OF FORTUNE

On the software side, Electronic Arts have been one of the leaders in anti-piracy techniques and they were the first to introduce the dreaded code wheel. Simon Jeffries, PR Manager for the company, said: 'We were the company who came up with the idea for a coded wheel. However, they add to the cost of the product so we don't do them anymore. I don't think there's any way to protect your software completely so we've found a happy medium and gone for manual protection. Most of our games are so in-depth that to try and play them without a manual would be impossible, and to try and photocopy them wouldn't be worthwhile. There will always be people who'll come up with ever more elaborate code protection to prevent disks being copied, but our attitude is that if there's someone out there with the knowledge to produce such code then there's definitely someone out there with the knowledge to break it. And to some pirates that represents a challenge. We estimate that for every legal copy of a game there are six illegal versions. Having said that, FAST have done a great job as two years ago the problem was a hundred times worse.'

WHAT CAN BE DONE?

Ocean's Managing Director and man behind the now infamous 'Dongle' puts the numbers even higher. Says Gary Bracey: 'It's impossible to estimate the size of the problem, but if I'm forced to I'd say that for every one of our games bought on the shelves10-50 are being copied, depending on the title. Of course not everyone who pirates a game would have bought it, but we think that every software company's profits would, at the very least, double if piracy could be eradicated. This is one of the main attractions of the console market and the reason a lot of Amiga developers are abandoning the machine. As long as piracy continues to thrive the number of companies making the transition to console will rise. It must be stopped now and what we had with the 'Dongle' was a chance to do just that. Someone had to make a stand and although every other software house was interested in the device they would only come in when they knew that the thing had been tried and tested. So we put our money where our mouth was which was a pretty brave thing to do. We could have passed on the cost, between £1 and £4, to the consumer, but we didn't, which is something we're pretty proud of. So it didn't work, but contrary to popular belief the device was not cracked in hours, but weeks by a team of hardened professionals using Emulators (very expensive bits of kit which mimic the microprocessor chip allowing access to all aspects of the program's code). The version that appeared on the Bulletin boards was a preproduction copy which was sneaked out of our back door shortly after the game was finished and didn't have the 'Dongle' code in it. Interestingly enough, we had hundreds of letters after the gadget's release from people who claimed to have an alternative, definitive anti-piracy device, but nothing really stood out as being viable, but I'm sure there's one out there somewhere. It's up to someone else to take up the running now.'

ENTER COMMODORE

Ultimately, who better to cross swords with the pirates and take the wind out of their sails than the Amiga manufacturers themselves, Commodore. We asked Andy Ball, head of Commodore UK's marketing, if they had any tricks up their sleeves. 'We aren't going to produce any hardware for existing machines, but with the 600 PCMCIA card slot now adorning the side of the A600 it should allow programmers to develop cards making it a lot more difficult to pirate. The same can be said for the CD, which is virtually impossible to copy. We don't suffer from software piracy directly simply because we don't produce any. However, we monitor bulletin boards and the like and, as was the case with workbench 2.0 which appeared on the circuit, we stamp on any infringements very quickly. I think you'll find all the companies do. The only way piracy can be beaten in my opinion is by technology and the medium of data storage changing from floppy disk. It's a pity Ocean's 'Dongle' didn't work. Without piracy, manufacturers could put their disks out at £14.99 or even £9.99 and still easily increase the profits they make today.' So the next time you meet a pirate and are offered dodgy disks for an amazingly low price, remember, he's not only taking money from corporate coffers, but he's practically stealing it out of your pocket as well – it doesn't seem quite so clever now, does it?

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VIDI AMIGA 12

IMAGE CAPTURE

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OVERVIEW

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TAKE 2

ANIMATION

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OVERVIEW

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AS SEEN ON TV

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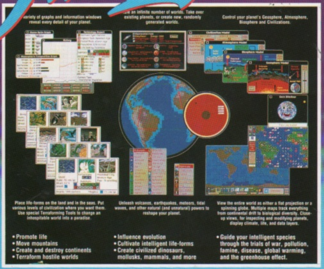

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